FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

JULY, 1954

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...ke billows upward from ...our stock food plant fire ...Chicago on June 18. (Article on page 618)

A CASE - SHEPPERD - MANN PUBLICATION

Swimming is great . . . but

are you ready

with the most effective artificial respiration known to science?

EMERSON

EMERSON
Resuscitators

"Simplest and Safest"

J. H. EMERSON CO.

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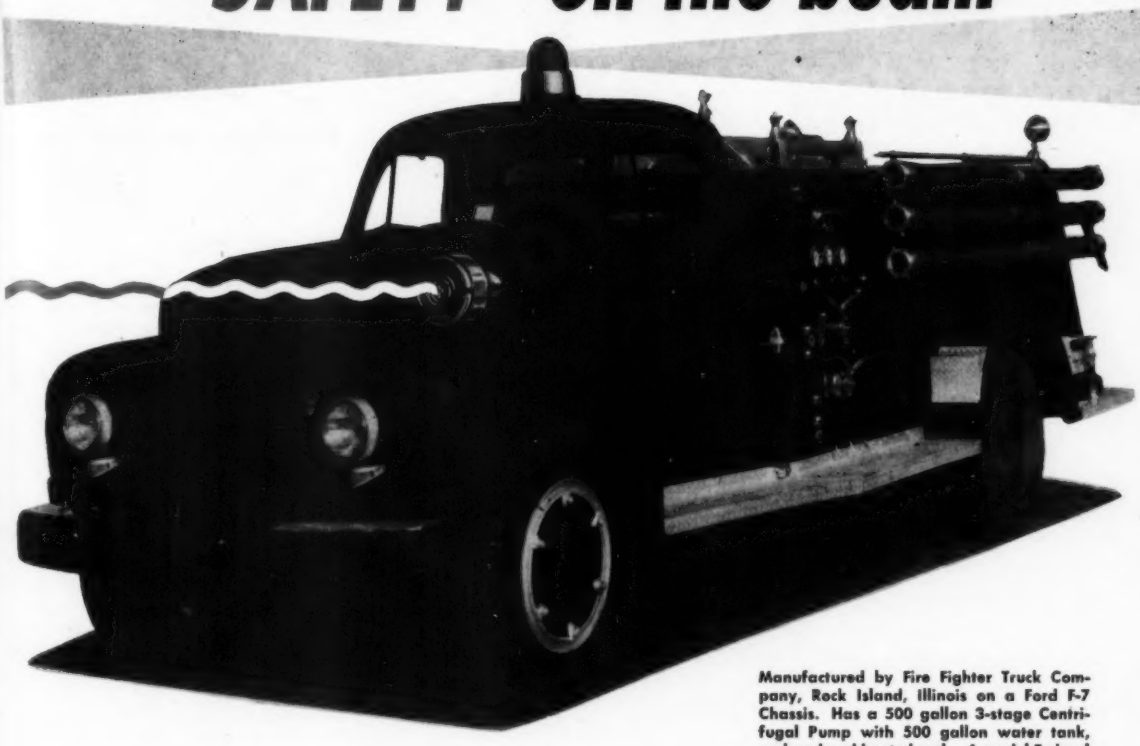
SAFETY "on the beam"



Manufactured by Fire Fighter Truck Company, Rock Island, Illinois on a Ford F-7 Chassis. Has a 500 gallon 3-stage Centrifugal Pump with 500 gallon water tank, enclosed and heated reels. A model Federal Q-2 Siren mounted on left front fender and a Federal Beacon Ray Light mounted on the roof of cab.

All fine custom-built fire-fighting equipment needs "on-the-beam" road-clearing protection. Speeding to a fire this fine apparatus necessarily exposes itself and its crew to the "perils of the road." Federal warning Signals, sirens and lights can give your apparatus the dual protection of sight and sound. The famous Beacon Ray's flashing twin beams are visible from all sides and the Federal Coaster siren's loud persistent voice demands the right-of-way miles ahead, alerting traffic to the positive and dangerous approach of fast moving equipment.

It has always been the custom for wise buyers of fine apparatus to specify Federal for the best in sirens and warning lights. They know that the finest in research, engineering and manufacturing goes into this dependable signal equipment for the protection of life and property.

Write today for Emergency Signal Bulletin

Specify FEDERAL SIGNALS ON ALL NEW EQUIPMENT

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SIGN and SIGNAL Corporation

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

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The Marshal's Baton

"NAPOLEON once said that every French soldier carries a marshal's baton in his knapsack.

● Every American fireman carries a marshal's five trumpets with him. Like the soldier of Napoleon, there is nothing to stop him from becoming head of his "fire army" if he is willing to study, and work for it.

● True, politics or favoritism may win a man place for a while, but only merit can help him keep that position.

● Behind every successful fire officer's rise is at least one qualification—*knowledge*. Nobody has a mortgage on knowledge. It is there for any man to grasp if he so wills. It comes in the spoken and the printed word, from those who have it, so that those who seek it may gain it.

● There's knowledge—and the marshal's five trumpets, if you please, in the month-by-month recording of the progressive development within, and related to fire suppression as contained in the pages of FIRE ENGINEERING. And when we say "pages" we mean *both editorial and advertising!*

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th Street, New York 18, N. Y., also publishers of *Water Works Engineering, Wastes Engineering*, etc. ¶Subscription price: United States and Canada, $3.50 a year; Pan-American and Foreign, $4.50; Single Copies, 40c. ¶Member of Audit Bureau of Circulations and Associated Business Publications, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 5, 1879.

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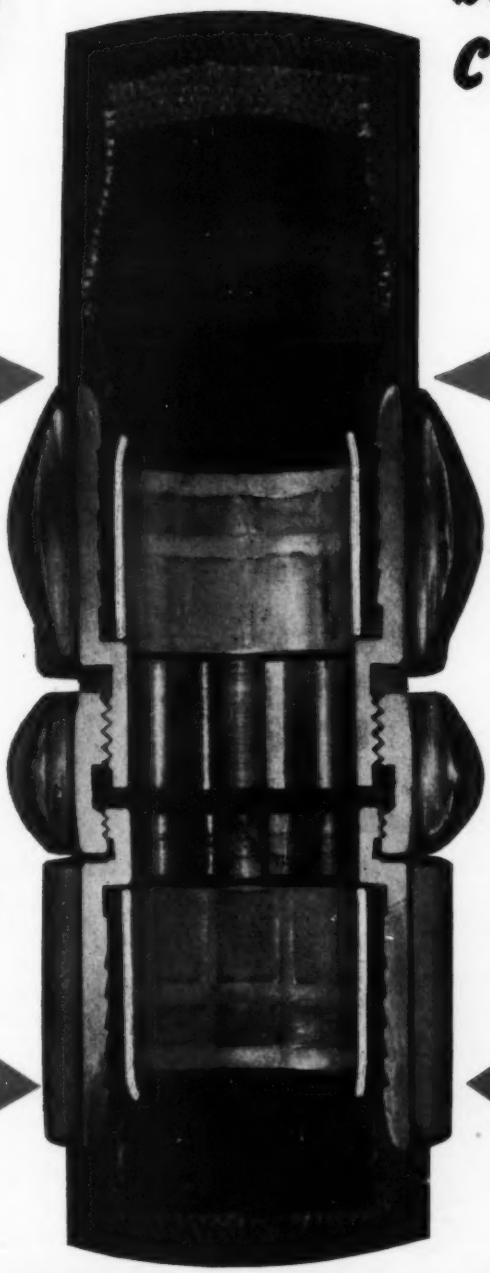
"Specialized Leadership"

FABRILON

MG WITH BLOW-PROOF COUPLINGS



TAPERED THROAT

Relieves jacket shearing action under severe pressure surge or shock. Cushions and protects jackets at coupling throat. Contains water hammer. Prevents hose burst at collar.

CRIMPED RING

This heavy gauge ring utilizes powerful expansion pressure while crimp of special design at throat relieves rubber and jacket materials. Prevents deformed and cut linings at ring.

FABRIC 3 LUG PATTERN

DESIGNED FOR FABRILON

MORE G-U-T-S!

The MG coupling will take a terrific amount of punishment. It will not bend or deform under toughest service. Rugged and dependable, it will give long, trouble-free performance.

HI-YIELD BOWL

Coupling bowl made from bronze alloy strengthened by the addition of high yield manganese. Extreme expansion pressure is utilized to insure positive, blow proof bond.

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THE ONLY EXCLUSIVE MANUFACTURER OF FIRE HOSE IN AMERICA

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E & J RESUSCITATOR - INHALATOR - ASPIRATOR

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. . . first name in Resuscitators

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When partial obstructions will not yield to aspiration, or when the air passages are swollen almost shut, the exclusive E & J feature "Precision Flow Control" assumes life-saving importance in emergency rescue treatment.
With it the operator can quickly find just the exact flow of oxygen that will squeeze past obstructions short of complete blockage to provide full inhalation and exhalation *at a slow but life-saving rate!*

FIND OUT MORE ABOUT THIS VITAL E & J FEATURE . . .
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Write to Dept. 544-7 at address below.

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E & J MANUFACTURING COMPANY
100 E. Graham Place, Burbank, California

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

If you're still using heavy, bulky fire hose—here's news for you

Now there's a hose that's lighter, stronger, easier to handle than ordinary hose—yet it costs no more. It's the newest B. F. Goodrich hose, called Highflex, and has all the features you'd expect to find only in premium hose.

The improvement in flexibility is easy to see. Highflex held by the man at left is actually as flexible as the sleeve of his fire coat. It's 23% lighter than ordinary hose, so it gets into action faster, handles easier during fires, can be hauled up ladders without strain.

After the fire is out, Highflex packs easily, quickly into a tight, 2-foot coil. And back at the station, it cuts minutes from loading time because it racks naturally on the truck bed, doesn't twist or kink. Highflex saves important space, too, according to Chief A. W. McNeil (at right, above), of the Cleveland, Mississippi Volunteer Fire Dept. He says, "We've increased our hose load from 1200 feet to 1600 feet and there's still plenty of room on the truck bed for more."

It's a chemically-produced fiber that makes Highflex so light and flexible. B. F. Goodrich uses this fiber as "filler" cords—the cords that go around the hose and carry the load under pressure. Compared with cotton, used as filler cords in other hose, the B. F. Goodrich cord has *3 times* the strength for the same weight of cord.

With B. F. Goodrich Highflex you get all the advantages of the most expensive, premium hose, yet it costs no more than regular hose. Have a BFG Fire Hose Distributor show you a sample of Highflex. Compare it with your present hose—for weight, flexibility, and strength. Prove to yourself that Highflex is your best hose buy. *The B. F. Goodrich Company, Dept. M-284, Akron 18, Ohio.*

B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

Symbol of Quality-Service-Protection . . . for the modern fire fighter

The famous Midwestern Manufacturing Company trademark is your guide to the finest protective clothing that money can buy—garments that are specifically designed to help safeguard your men's life on every run—enable them to use their equipment to the fullest advantage. Superior quality, design, fabric texture and many exclusive features have made Midwestern Protective Clothing highly favored wherever men fight fires.

- **Exclusive Safety Features**
- **Tailored for Comfort**
- **Softer, More Pliable Materials**
- **Made of Natural Rubber**

We manufacture both rubber and fabric fire coats. In our vast selection of materials you will find the type of fabric exactly suited to your climate and needs. You can depend on the softness and flexibility of the high grade materials used to meet your most exacting requirements for lasting comfort and service under the most rugged conditions.

For complete information on our full line of firemen's protective clothing, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Coats**

Here's how this M·S·A "Mechanical Nose" sniffed out a fire before it started!

Reports of unexplained gasoline odors in a basement room of the 12-story Minneapolis Grain Exchange sent city Fire Department officials into action.

Order number one from Charles A. Johnson, fire prevention chief, cut off electrical equipment in the room—prohibited smoking in the area.

Preliminary inspection traced the gasoline vapors to a hollow stair-supporting post.

A hole was knocked in the stair wall and the air tested. The M.S.A. Explosimeter reading showed 10%. (A reading of 100% indicates an explosive mixture.)

Readings were taken from a hole in the floor—60%! Investigators, using the Explosimeter, began a search that wound through a four block area, and ended 150 feet from the Grain Exchange. Here, two 550-gallon gasoline storage tanks, in poor condition and leaking badly, were uncovered. The escaping gas, following the rock stratum, had found its way into the Grain Exchange. The tanks were removed, and a potentially disastrous explosion and fire was prevented.

THE M.S.A. EXPLOSIMETER

This device has proved its accuracy during use in routine inspections and in investigations of reported gas odors. In these services, the Explosimeter is helping Fire Departments everywhere do a better job of preventing fires caused by explosive gases and vapors. Its operation is simple, takes no special training. It is portable, light to carry, easy and inexpensive to maintain. Get the story today on the M.S.A. Explosimeter. Write, or call.

MSA
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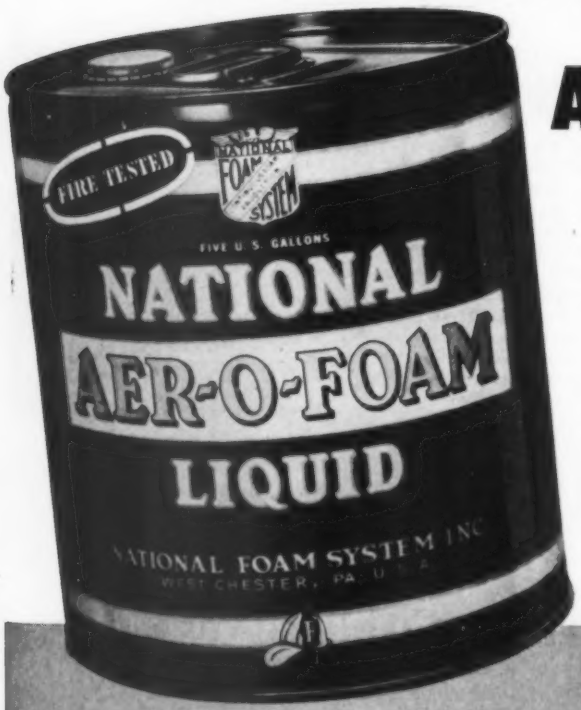
Call the M.S.A. man on your every safety problem . . . his job is to help you.

Your Company's Future May Depend on *THE RIGHT PROTECTION*

Be Sure It's — FIRE TESTED



AER-O-FOAM

The only Foam to carry this seal!

THERE'S NO second chance with fire. So guard your flammable-liquids risks with *fire-tested* AER-O-FOAM. This is the foam that is tested on actual oil or solvent fires—every batch of it. Its tough blanket of fire-killing foam has *already* extinguished a fire when you buy it!

Three fire-tested AER-O-FOAM products give you complete protection for flammable liquid fires—6% Regular Liquid and 3% Regular Liquid for petroleum fires, and AER-O-FOAM "99" for either polar solvents or petroleum fires. Write for data on AER-O-FOAM products and devices . . . Foam Chambers, Dip-tank or Drain-board Systems, Nozzles, Extinguishers, Trucks, Towers.

JUST OUT—"Foam Fire Protection," illustrated booklet on what Foam is, what it does, how it works. Yours free.

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FOAM SYSTEM INCORPORATED
Headquarters for Foam Fire Protection — WEST CHESTER, PA.

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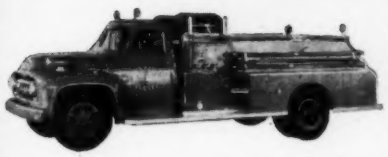

GRAND TRAVERSE COUNTY, MICHIGAN

Why are MORE and MORE communities specifying John BEAN Fire Fighters?

ROCHESTER, MINNESOTA

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DANA, ILLINOIS

because:

1. Whatever a community's requirements, there's a John Bean Fire-Fighter to fit them exactly. John Bean equipment is designed to include either a high-pressure fog system or a volume pumping system, or both!

2. Fires are stopped faster by John Bean High-Pressure Fog — with 90% less water. The heat absorption and smothering action of John Bean high-pressure fog makes water 10 times more effective than when delivered in a conventional stream.

3. John Bean Fire-Fighters are built to take around-the-clock service. High pressure and peak volume performance at low engine speeds.

Investigate the trend in modern fire apparatus for your community. Get the full John Bean story — Today.

JOHN fmc BEAN

TWO-FISTED FIRE-FIGHTERS

Can be mounted on most standard truck chassis

John Bean Division
Lansing 4, Michigan

John Bean Division
San Jose 3, California

A PRODUCT OF FOOD MACHINERY AND CHEMICAL CORPORATION

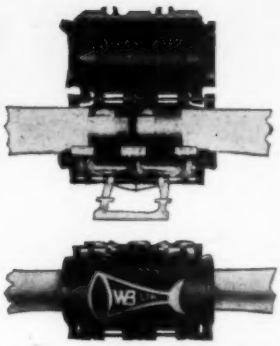
PRODUCTS ENGINEERED AND DESIGNED TO FIGHT FIRES!

HOSE ROLLER

Constructed of Wooster-lite alloy with bronze bushing and cold rolled steel pins and rope hook. This roller weighs less than 10 lbs. It is 13" long and 8" wide and high. Most departments are now specifying this hose roller on all their pumper specifications as well as ladder trucks.

TRUMPET HOSE CLAMP

Extremely light, self-locking, quickly attached, easy to shut down charged line without extra pressure surge. Opening is steady and controlled.



TRUMPET HOSE JACKET

The Wooster-lite alloy used in this jacket will not crack or break in service. The liner of tough, live synthetic rubber is so constructed that under pressure all joining edges are sealed tight. Spring latch snap locks shut positively with one easy motion. Available in 1½" and 2½" sizes.

UNIVERSAL TRUMPET SPANNER

In addition to having the tapered head which fits all types of lugs on couplings from ¾" thru 4", this wrench has a very efficient "jimmy" and gas cock shut-off key.

UNIVERSAL HYDRANT WRENCH AND SPANNER

This wrench head is designed to take all types of pentagon, octagon or square hydrant nuts, since the screw handle is adjustable to compensate for size. The spanner hook takes all couplings from ¾" through 4".

LITTLE GIANT PLAY PIPE

(PGL-BN-T5R)

With cushion ball shut-off and 6" std. threaded tip and rubber bumper.

OSCILLATING HYDRANT PUMP

An ideal, inexpensive hydrant pump which can be relied upon to always work regardless of weather conditions. The base of the pump is adapted to fit and lock on any pentagon or square hydrant. The stainless steel shaft resists scoring, pitting, and corrosion.

GEYSER TURRET NOZZLES

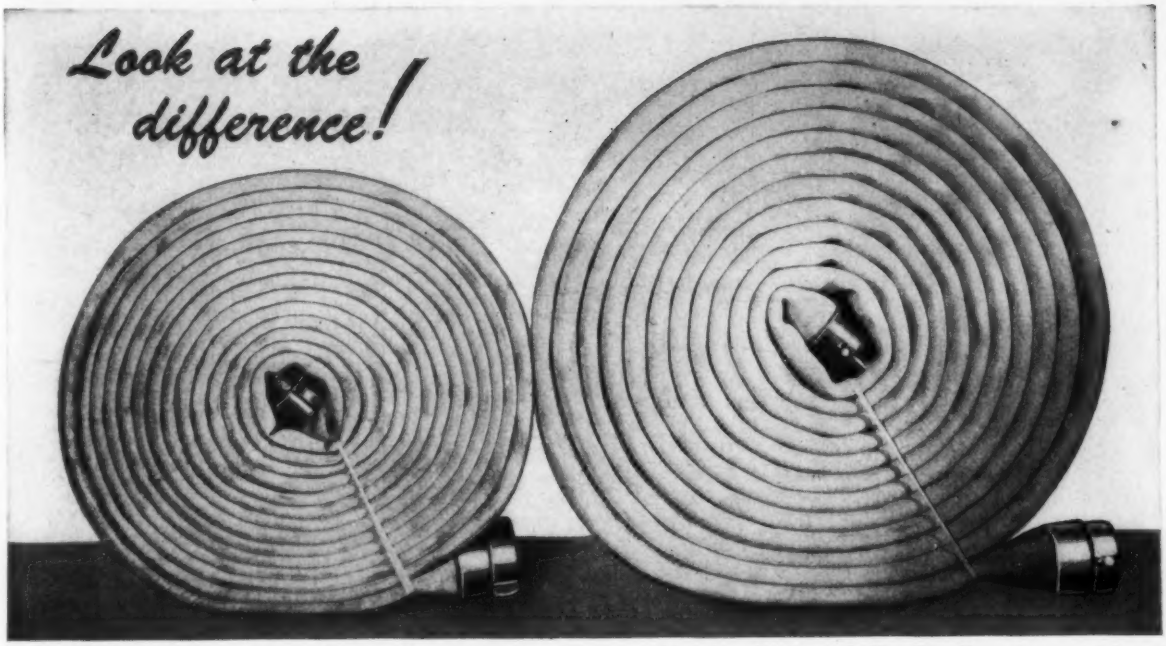
Operate safely at lower elevation ranges than other portable units. Fully adjustable elevating range. Can be turned in complete circle horizontally.

Rotatable mounting fixture intended for carrying nozzle on top of apparatus for use as rigid deck pipe. May be quickly dismounted for portable surface use. Base Plate 20" x 20", conventional post height 4".

WOOSTER BRASS

WOOSTER, OHIO

A DIVISION OF THE FYR FYTER COMPANY



Above photo emphasizes pronounced savings in storage space between a 50 ft. length of new LaFlex Fire Hose shown at left and a 50 ft. length of ordinary Fire Hose shown at right.

New LaFlex Fire Hose

WITH SYNTHETIC FIBRE FILLER, MORE FLEXIBLE, LIGHTER, USES LESS SPACE

The American-LaFrance-Goodyear LaFlex "All-Weather" double-jacket Fire Hose is made by the Goodyear Tire and Rubber Company, for the American-LaFrance-Foamite Corporation.

LaFlex Fire Hose high lights every desirable feature of an outstanding fire hose; *flexibility, lightweight, small storage space* requirements, great double-jacket strength and ruggedness. This combination of unusual features is obtained by combining a new man-made synthetic fibre with high grade cotton fibres into balanced hose jackets.

Compared to conventional cotton, this new fibre is exceptionally light in weight in proportion to its strength and is, therefore, utilized in the filler section of the jackets for superior hose strength. Cotton, because of its ability to withstand wear and abrasion, is used for jacket warp in order to provide the ultimate in practical wearability.

Due to its greater flexibility, it will *coil on a smaller diameter* than conventional hose and thus permit maximum use of storage facilities.

The LaFlex is a water-repellent *White* Fire Hose. Both hose jackets are doubly treated with All-Weather water repellency to insure that all fabric is thoroughly impregnated. This All-Weather process is believed to be the most effective water-repellent treatment known to the industry.

The famed Alaseptic treatment for inhibiting the deteriorating action of mildew is applied at the same time that the fire hose undergoes All-Weather processing.

Seamless inner tubes are provided with special backing to insure a firm bond between the inner tube and the jacket, thus producing a smooth, noncorrugated waterway throughout the length of the hose.

Smooth waterways speed the flow of water without noticeable friction loss of fire-fighting capacity.

LaFlex Hose is flat cured in special mold equipment. During the curing of the seamless tube it is in the position it will occupy during its entire life, except when in use.

Write for illustrated literature, or to have salesman call.

OUR *2nd Century of Leadership in* FIRE PROTECTION

AMERICAN-LAFRANCE-FOAMITE *Corporation*

ELMIRA NEW YORK U.S.A.

ALFCO

Handclasp of a friend-in-need

There's confidence in the very "feel" of the world famous C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers. The quick-acting "Squeez-Grip" fits your hand naturally like a handclasp ... hangs right ... carries right ... works right. You're in complete command of the situation instantly ... no fumbling ... no fatigue.

From the non-conducting, shatterproof discharge horn to the high strength, durably finished cylinder, you get top quality construction that results in a lifetime of satisfactory service. Because of the very few working parts and corrosion resistant materials throughout, the total cost to you over the years is less than other initially lower priced makes ... fire after fire, recharge after recharge, without trouble.

It's not hard to see, when you fully compare and try, why C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers are your best buy for killing flammable liquid and electrical fires, as well as some surface fires involving ordinary combustible materials. Sizes range all the way from 2½ to 100 pounds capacity ... all fully approved by the Underwriters' Laboratories, Inc., Factory Mutual Laboratories, Armed Forces and Government Bureaus.

With C-O-TWO Squeez-Grip Carbon Dioxide Type Fire Extinguishers the penetrating carbon dioxide is a clean, dry, non-damaging, non-conducting, inert gas ... smothers fire instantly, leaves no after fire mess ... harmless to equipment, materials and finishes ... even food is still perfectly edible.

Act now for complete free information on these first-rate, sure-acting fire extinguishers. Remember fire doesn't wait ... get the facts today!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
Built-In Smoke and Heat Fire Detecting Systems

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Sales and Service in the Principal Cities of United States and Canada

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

Those Who Know Insist On HANNAY HOSE REELS

New TASC Fire Truck for Cranford, N. J. Fire Department supplied by Trautwein's, Inc., Woodbridge, N. J., and equipped with Hannay Hose Reels.

Check the Superior Advantages

HANNAY ELECTRIC DRIVE HOSE REELS

Water Resistant
Vapor Resistant
Explosion-Proof

- ★ Extra strong construction to withstand high pressures.
- ★ Explosion-proof, heavy duty motor protected against fog, foam, fumes and water.
- ★ Sealed push button control.
- ★ Safe rewind speed, always under control.
- ★ Quiet, positive sprocket and chain drive; no gears to shift, no clutch to engage.

The continuing and increasing approval of Hannay Hose Reels by leading manufacturers and major fire departments is sound evidence of their superiority. Progressive fire officials, of large municipal departments and volunteer companies alike, know that when the going is tough there's no time for mechanical upsets . . . and that HANNAY Hose Reels can always be depended upon to do *their* part of the job. Attention to details makes for perfection. Specifying HANNAY Hose Reels is a detail that warrants your fullest consideration.

Ask Your Supplier or Write for Full Details

....LOOK FOR THIS

HANNAY
REG. U.S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

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MANUFACTURERS OF MANUAL AND POWER OPERATED HOSE REELS FOR EVERY PURPOSE

St. Louis Fire Dept. Reports: **It's easier to rack and handle this lighter, more flexible hose made with Dacron***

Hose made with "Dacron" is much less bulky, permits truck to carry far more hose.

*REG. U.S. PAT. OFF.

"Our experience with hose made with 'Dacron' has been pleasing in every respect," says Chief Kammann of the St. Louis, Mo., Fire Department. "We've found its extra flexibility makes it easier to rack, or stow aboard trucks, and easier to handle at fires. Our hosemen especially like its lightness, as those 50-foot lengths get mighty heavy going up a ladder."

Du Pont "Dacron" polyester fiber is the load-carrying "filling" cord that reinforces the hose. The great strength of this fiber makes possible a hose with less bulk . . . 15% lighter . . . yet stronger and more flexible than ordinary hose. The remarkable water resistance of "Dacron" means more protection against mildew, and longer life for hose.

Hose made with "Dacron" has been field-tested for two years, and has proved its superiority. Du Pont makes only the "Dacron" fiber . . . does not manufacture hose. Fire hose made with "Dacron" is produced by a number of leading fire-hose manufacturers. Order it from your supplier next time you need hose. E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Delaware.

ADVANTAGES OF FIRE HOSE MADE WITH "DACRON":

- Lighter
- Stronger
- More flexible
- Cuts loading time
- Saves space

DACRON

POLYESTER FIBER

DU PONT

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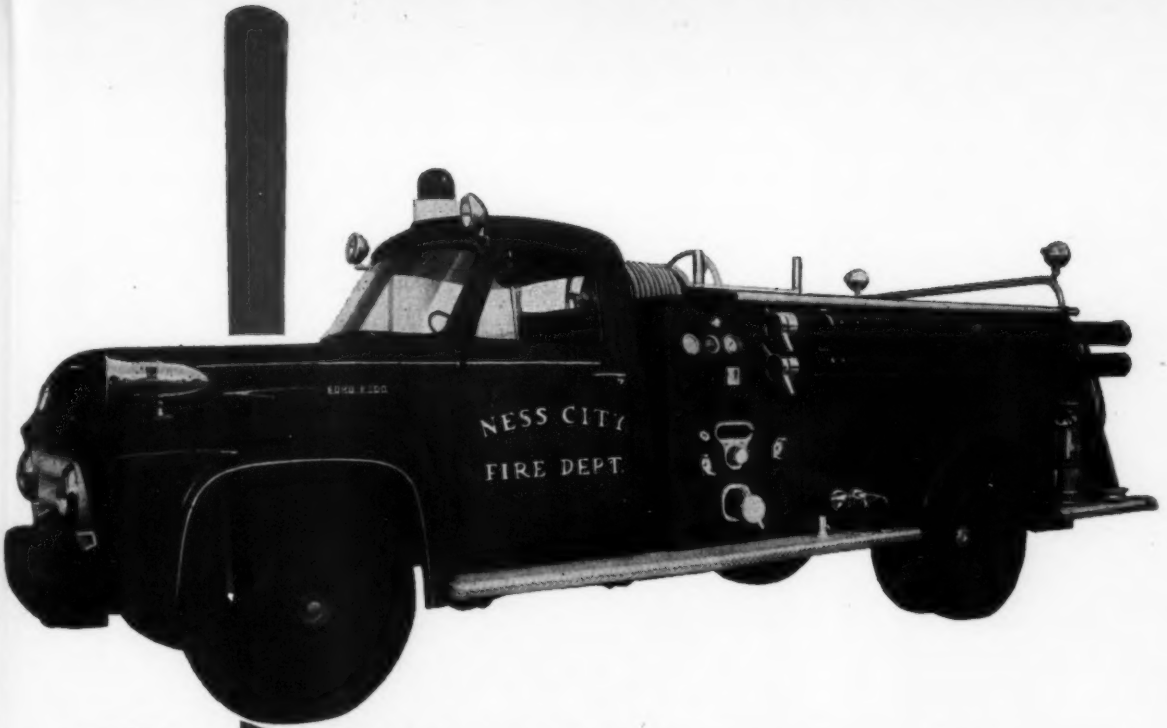
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



Specify BOARDMAN-Built Fire Fighters for DEPENDABILITY plus ECONOMY!

- 500 GPM Triple Combination Pumpers—1, 2 or 3 Stage
- 750 GPM Triple Combination Pumpers—2 or 3 Stage
- Two Tanker Models
- Rescue Squad Trucks

Fire fighting requires equipment that is, above all else, *dependable* . . . exactly what BOARDMAN fire trucks are engineered and built to be. The result of more than 20 years' experience, BOARDMAN-Built fire fighting equipment always comes through beautifully in action — never lets you down in emergencies. And better still, BOARDMAN pumpers, tankers and special bodies combine this custom performance with the economy of standard chassis. Using any commercial chassis of your choice means first-cost savings, reduced maintenance costs and a minimum of down time for repairs. From its high-capacity Waterous pump to the very last fitting, every BOARDMAN-Built fire fighter is extra modern, extra dependable—and amazingly economical.

Dealer territories available in some states-write for information

WRITE TODAY for details and specifications on BOARDMAN-Built fire fighters.

THE BOARDMAN CO.
OKLAHOMA CITY, OKLAHOMA
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THE GREATEST SHOWING OF INDUSTRIAL RUBBER PRODUCTS ON EARTH
REPUBLIC
FIRE HOSE
The jackets of Republic Fire Hose, made only of selected yarns, are plain, Provar Processed (mildew and vermin resistant) and waxed, or in any combination. Tubes have long-aging qualities. Five municipal grades, 3 industrial grades (also made with rubber or neoprene covers) and lightweight hose for forestry service are available.

Your Responsibility

. . . is to secure the fire hose that will do the best job of protecting your community.

Our Responsibility

. . . is to provide you with that "right" hose, as we have done for cities all over America for the past 52 years.

One of the 5 grades of Republic Municipal Hose is the "right" hose for you. Your local Republic Distributor can show you which is best for you . . . and can tell you the advantages of plain, waxed or Provar Processed (Republic's exclusive mildew-proofing treatment) Hose. Call him today or write directly to us.

"Quality Hose Builders for More Than 50 Years"

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

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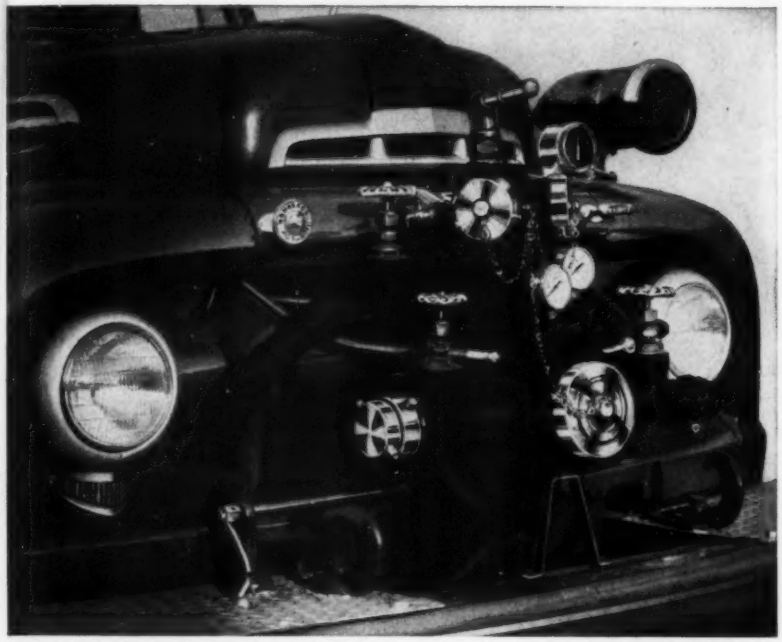

with the BARTON-AMERICAN TYPE UA Front-Mounted PUMP

Problem—Your community needs additional fire protection—but the "budget" is already strained?

Solved—You can get a pumper with powerful, top-quality Barton-American Front-Mounted Pump for a minimum investment!

Problem—Need a pump that delivers plenty of pressure—for fog as well as straight streams?

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Problem—Need a pumper to handle grass and brush fires economically—as well as buildings and larger fires?

Solved—With a UA Pump, your engine costs less to buy, less to operate, less to maintain—yet fights fires while moving.

Problem—Do complex pump controls make training of recruits and volunteers difficult?

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Solved—The Barton-American UA Pump is frost-proof—and gives engine extra summer cooling.

Problem—Need a pumper you can drive right up to pond or stream for fast water supply?

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For complete details, write for your copy of UA Pump Bulletin 8330-B!

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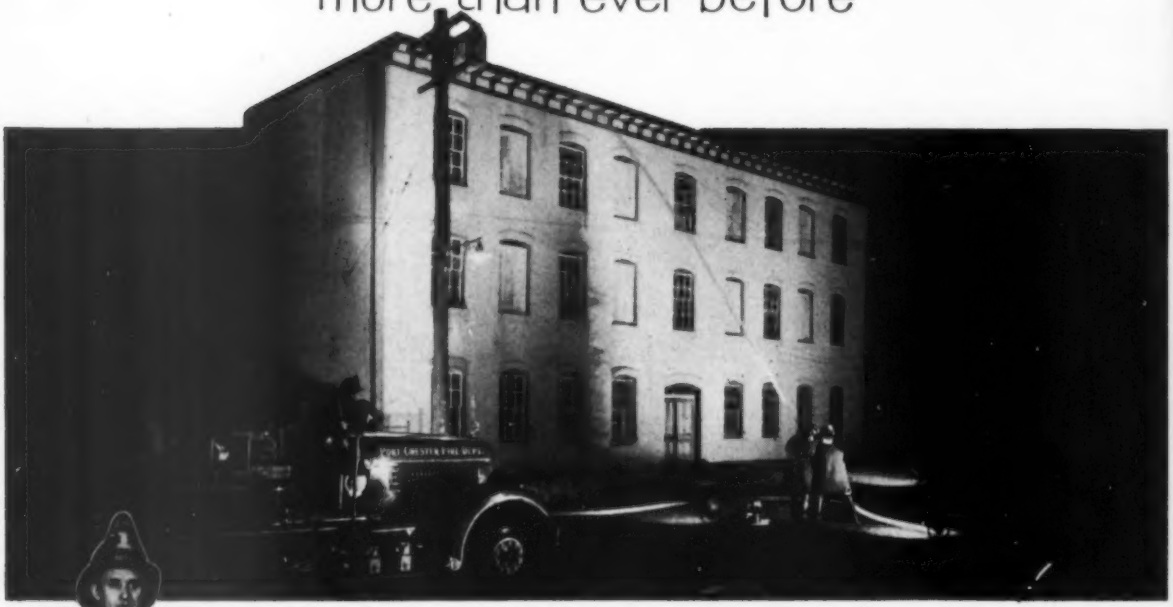

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You need Homelite Carryable Generators for floodlighting fires. You need Homelite Carryable Generators for highway accidents or drownings. You need Homelite Carryable Generators for operating power tools and for standby emergency power. And of just as vital importance . . . today, you need gasoline engine driven generators for all out civil defense.

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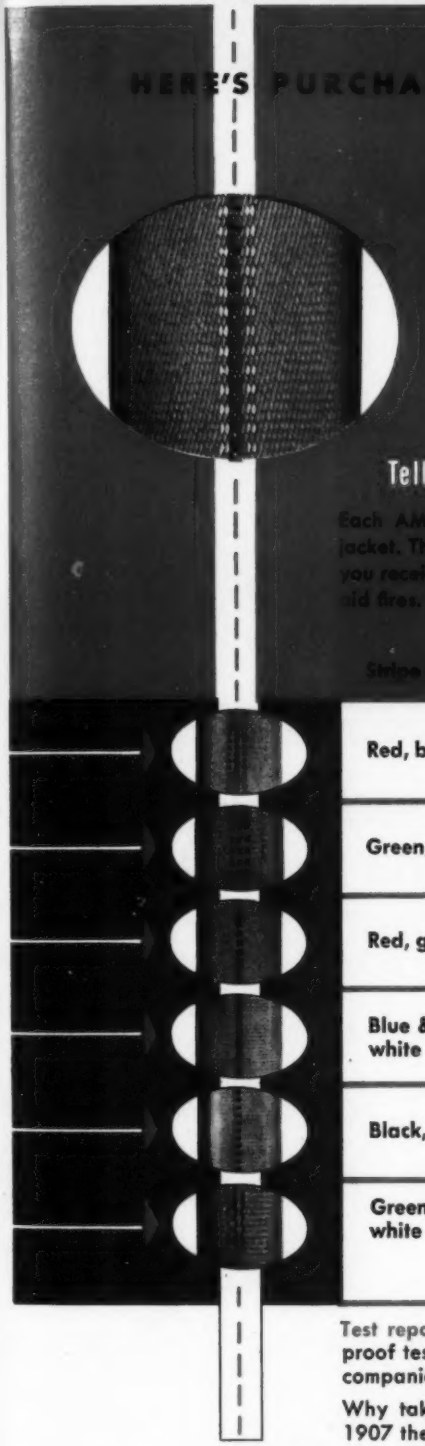

Tells you instantly what brand and construction you're getting!

Each AMERICAN brand fire hose has its own identifying stripe woven into the jacket. The pattern and colors of this stripe enable you to tell immediately whether you receive the hose you order... also enable you to identify your hose at mutual-aid fires. Here's what these stripes tell you—

Stripe Pattern	AMERICAN Brand	Construction
Red, blue, red	American Heavy-Duty High Test	Heavy-duty cotton-synthetic jacket
Green, red, green	American Medium-Weight High Test	Medium-weight cotton-synthetic jacket
Red, green, red	American Light-weight Extra Flexible	Lightweight cotton-synthetic jacket
Blue & red with white	Crackerjack	Heavy-duty cotton jacket
Black, red, black	Municipal	Medium-weight cotton jacket
Green & red with white	Tiger	Lightweight cotton jacket

Or your own special identifying stripe can be woven into any AMERICAN hose you order

Test report, too—Each 50-foot length of AMERICAN Municipal fire hose is factory proof tested, with couplings on, for burst strength, stretch and twist. Test report accompanies each shipment—further proof that you're getting what you order.

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AR-29

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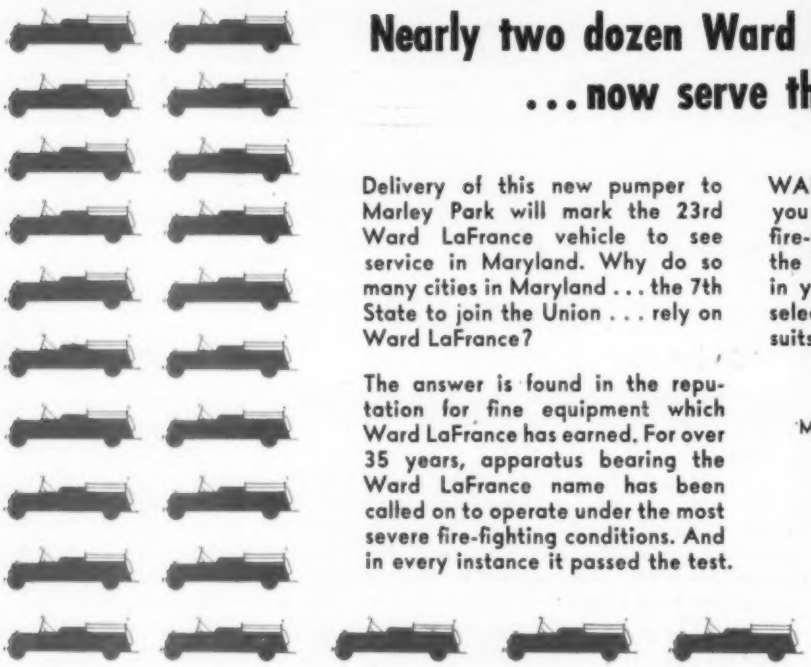
Maryland makes it 23



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Delivery of this new pumper to Marley Park will mark the 23rd Ward LaFrance vehicle to see service in Maryland. Why do so many cities in Maryland . . . the 7th State to join the Union . . . rely on Ward LaFrance?

The answer is found in the reputation for fine equipment which Ward LaFrance has earned. For over 35 years, apparatus bearing the Ward LaFrance name has been called on to operate under the most severe fire-fighting conditions. And in every instance it passed the test.

WARD LA FRANCE CAN HELP you modernize your community's fire-fighting forces. Why not talk to the Ward LaFrance representative in your area . . . he'll aid you in selecting the equipment that best suits your particular requirements.

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Rockwood FogFOAM SpotPROTECTION System automatically drenches loading platform.

How to muzzle a vicious fire hazard

Dangerous, small-area fire hazards can viciously destroy life and nearby property — if not properly protected.

The tank truck loading platform above, for instance, imperils not only the tank trucks being loaded but also the storage tanks in back of it. Should a truck connection break during loading causing a static spark thus igniting a truck, millions of gallons of gasoline would go up in flames.

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ROCKWOOD *Engineers Water . . . to Cut Fire Losses*

Rockwood Foam, available in 5-gallon cans or 50-gallon drums, keeps Rockwood FOAM and Rockwood FogFOAM SpotPROTECTION Systems constantly replenished. No replacement problem.

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SEND FOR THIS INFORMATIVE BOOKLET

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Portable Fire Protection Division
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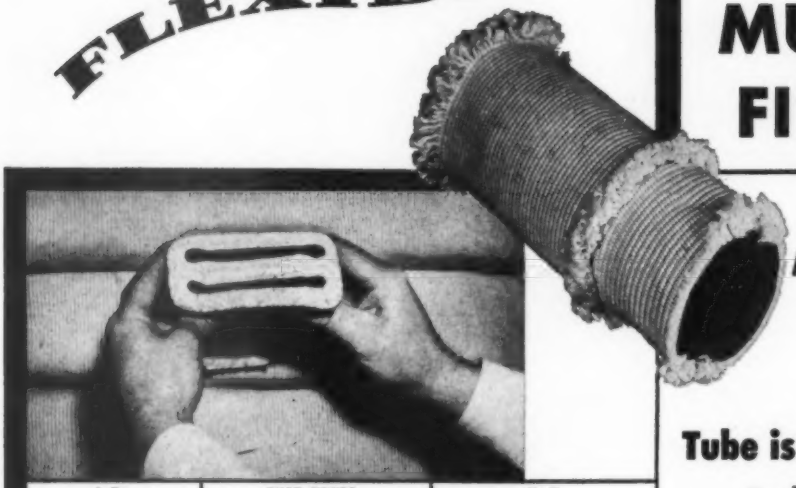
FLEXIBLE

BI-ROLL MUNICIPAL FIRE HOSE



All Yarn in Bi-Roll Jacket is Antiseptically Treated.

Tube is Oxygen-Bomb Tested to Insure Long Aging

I. D. IN.	TEST PRESS. LBS./SQ. IN.	O. D. FOR COUPLINGS
1½	400	2"
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Special Construction Provides Longer Life • • • Greater Flexibility • • • Greater Safety

Flat Fold Enables You to Store a Greater Amount of Footage in Truck Beds

BI-ROLL JACKET FEATURES

The Bi-Roll Jacket is circular woven in an atmospherically controlled room to insure balanced weaving. Long staple domestic cotton of standard length cords is used for inner and outer jacket. These cords are practically identical in weight which insures balanced construction. This means that twisting, writhing and elongation are minimized when the hose is under pressure.

The finished jacket is carefully inspected to insure freedom from knots, lumps and other imperfections. It can be treated with the Hewitt-Robins special wax and gum impregnation process which cuts down the jacket's water absorption factor—makes it freeze resistant and provides 100% resistance to mildew and rot. This wax and gum treatment gives the jacket a rich, golden hue and does not impair the flexible nature of the hose. Treated or untreated, Bi-Roll remains soft, strong and highly flexible.

BI-ROLL TUBE FEATURES

The tube in Bi-Roll Hose is made of properly vulcanized plantation rubber possessing slow aging, non-cracking, non-blooming, non-acid forming qualities, oxygen bomb-tested to insure long aging. Tube interior is extra-smooth and free of pinholes and pitting. This provides a friction-free passage for rapid flow of water through the hose.

The tube is not vulcanized to the jacket at point-of-fold. This construction helps to prevent cracking when hose is in storage . . . allows greater overall flexibility . . . permits a flatter fold—an important feature which makes it possible to store a greater amount of Bi-Roll in truck beds. This means you can speed more footage of hose to the fire scene with your present equipment . . . handle it easier and with greater safety. You can readily appreciate the additional fire fighting efficiency made possible by these features.

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In recent open air tests under adverse conditions, CBM completely extinguished highly flammable lacquer fire in a record one-half second. Only one automatic ceiling type extinguisher was used.

FOR FASTER EXTINGUISHING ACTION – SPECIFY TRONA CBM

(CHLOROBROMOMETHANE)

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PROPERTIES

Characteristics	Clear, colorless liquid with a sweet odor
Boiling range at 760 mm. Hg 5-95%	66-68 deg. C
Freezing Point	below –65 deg. C.
Specific Gravity at 25/25 deg. C.	1.910/1.940
Pounds per gallon at 25 deg. C.	15.98
Flash Point	None
Fire Point	None
Molecular Weight	129.4
Solubility per 100 grams water at 25 deg. C.	2.4 grams
Solubility in common organic solvents	Infinite
Cloud Point (moisture)	below 3 deg. C.

Meets U. S. Air Force Specifications No. MIL-B-4394-A

Send for free booklet containing complete information on CBM.

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THE GREATEST NAME IN FIRE APPARATUS

FIRE ENGINEERING

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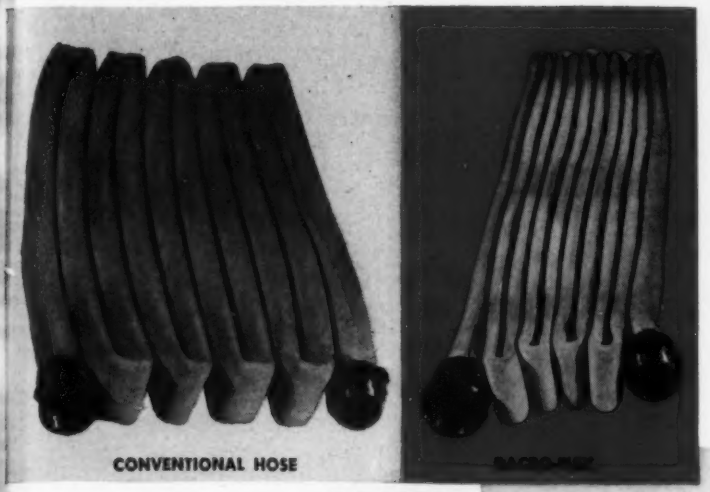
ANY WAY YOU PACK IT



HAMILTON Dacro-Flex FIRE HOSE SAVES SPACE

FOLDED....

OR

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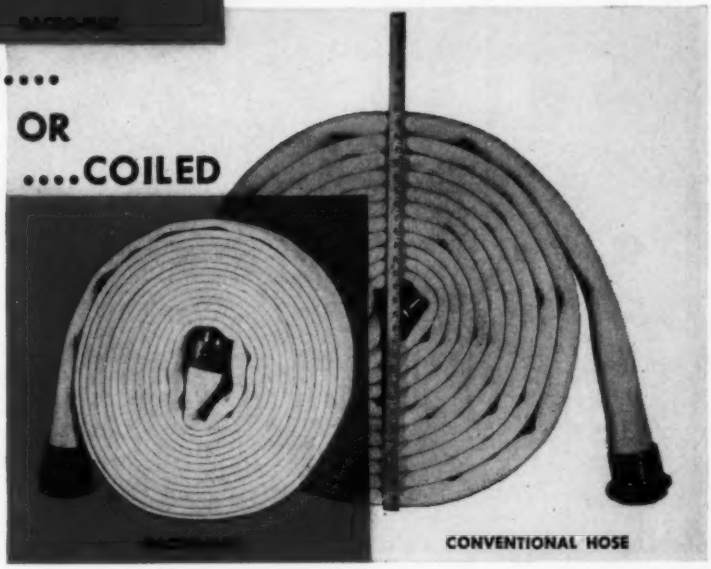

HAMILTON Dacro-Flex FIRE HOSE IS 20% LIGHTER

Than Conventional Hose

CHECK THESE FEATURES

- ✓ GREATER FLEXIBILITY !
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- ✓ TESTS TO 400 LBS. P.S.I. TEST PRESSURE !

Dacro-Flex is only one of the many quality HAMILTON RUBBER products which have served industry for more than three-quarters of a century.

Complete technical familiarity with the rigid requirements of top-grade mechanical rubber goods, plus modern high-volume machinery make it possible for you to buy the *best* without paying a premium for the quality you demand in

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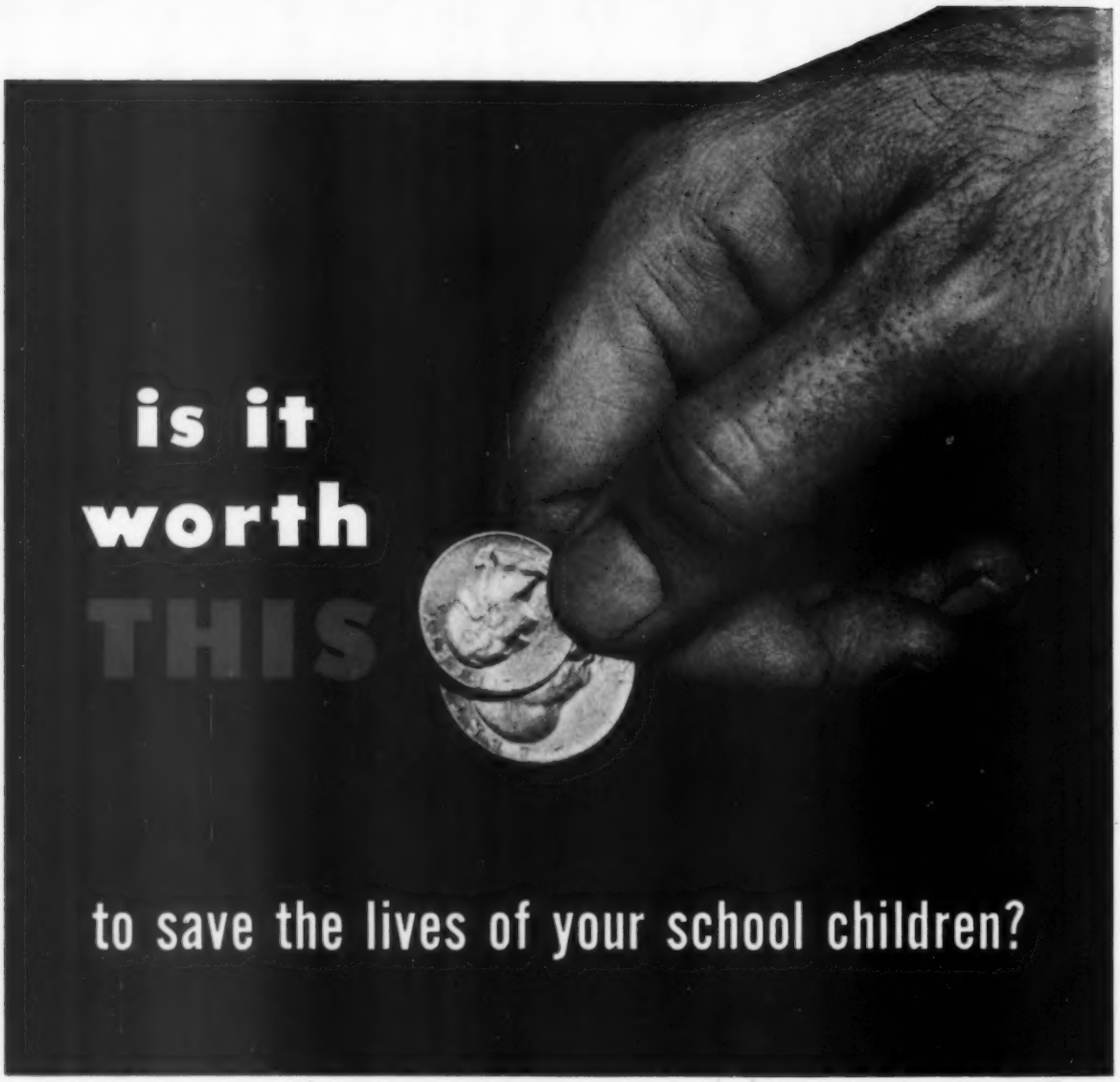


Many people don't realize that a community of less than 50,000 people can have safe, sure fire alarm protection for an average annual cost of 75¢ per box per person.

And that cost includes installation of the system, as well as maintenance throughout the years.

Schools — yes, and hospitals, hotels, institutions cannot go unprotected without endangering hundreds of human lives.

For the full story of safe, sure alarms with a Municipal Fire Alarm System, consult us about making a survey.

There is no substitute for the Municipal Fire Alarm System

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.
In Canada: Northern Electric Co., Ltd., Belleville, Ont.

JULY, 1954

FIRE ENGINEERING

VOL. 107, NO. 7

With the Editor

FCDA Sets Up Fire Division

As readers of this Journal know, for some time we have been critical of the Nation's civil defense efforts and its organization, or should we say, lack of it?

This criticism reached a peak when we informed a bewildered fire service that, at the Federal level, fire defense in time of enemy atomic attack was considered of less importance than digging the dead out of ruins, as indicated by the Federal Civil Defense Administration's decision to subordinate the fire service to a nebulous "rescue service."

With no intent to belittle rescue operations, particularly the kind of rescue for which the fire service is so well trained and geared to do, the fire service—quite properly, it seems to us—objected to its downgrading by the Director of FCDA.

The Director, never at a loss for well-turned platitudes, assured the Fire Advisory Committee, comprising representatives of most of the Nation's fire service and related organizations, that he was fully conscious of the importance of fire defense in time of atomic attack and that the fire service needn't worry, it would be given its rightful place in the scheme of things, CD-wise.

And then a glimmer of hope was seen in the recent announcement by the FCDA that a special Fire Services Division was being set up.

But a disappointment was in store for those naive enough to believe the FCDA would go the whole way in following the wishes of the Committee.

On the basis of the high esteem in which Kyle Laughlin is held by the fire service and the splendid educational and administrative background he possesses, it was expected that any upgrading of the fire service would carry Mr. Laughlin, who has been serving so effectively as Chief of the Fire Branch, Public Safety Division, along with it.

Apparently such was not to be the case. A Fire Services Division was set up all right, but a former Fire Chief of a city of 30,000 population was placed in charge. Kyle Laughlin was actually downgraded in the Division. In effect, he has been designated as "specialist in thermal research and weapons effects."

We have no criticism for the Chief who now heads the Fire Services Division. He is capable. But we do condemn the displacement of a fully qualified, experienced man, in whom the fire service has learned to have the deepest faith. Kyle Laughlin has been called upon to participate in the deliberations of more fire service association conferences than has any other federal official before him, and he engendered great respect for the organization he represented.

However, in view of the treatment accorded him, the fire service, noteworthily loyal to those who have won its confidence, cannot now, we believe, be beguiled into wholehearted cooperation with the FCDA by any face-saving maneuver conceived by the latter.

It is particularly unfortunate that with one fell swoop the FCDA had to undo what has taken years to accomplish—unrestrained cooperation between the two groups.

Fortunately, Kyle Laughlin still remains with the FCDA. And he can be expected to carry on with full loyalty to his organization and to the fire service as well. We only hope that he will be as readily available in the future as in the past to render assistance to the fire service without restraint.

Radio Inspections—Cut to Fit

When the value of fire service radio as an instrument of *preventing* fire, as well as *furthering fire suppression* on the fire line became known, and *Fire Engineering* published the first reports of "radio inspections" of industrial and commercial premises (in which fire crews go out to inspect, but remain on duty ready for fire duty, there were fire officers of larger cities who said radio inspections may be all right for the *smaller* cities, but they'll never work out in the metropolitan areas.

Well, that theory has been exploded by the experience of the world's largest city, New York. Fire hazards are being inspected to an extent never before believed possible in this great city, largely because of the intensive use being made of short-wave fire department radio, without in any way jeopardizing the fire fighting capabilities of the companies in the areas conducting the inspections.

Between February 15 and April 15, last, 116,000 inspections were made of factories, commercial buildings, schools, hospitals, institutions and multiple dwellings—to turn up 9,748 violations! And that is only the beginning!

Fred Shepard

Low Cost Training and Rating In TVA Fire Suppression

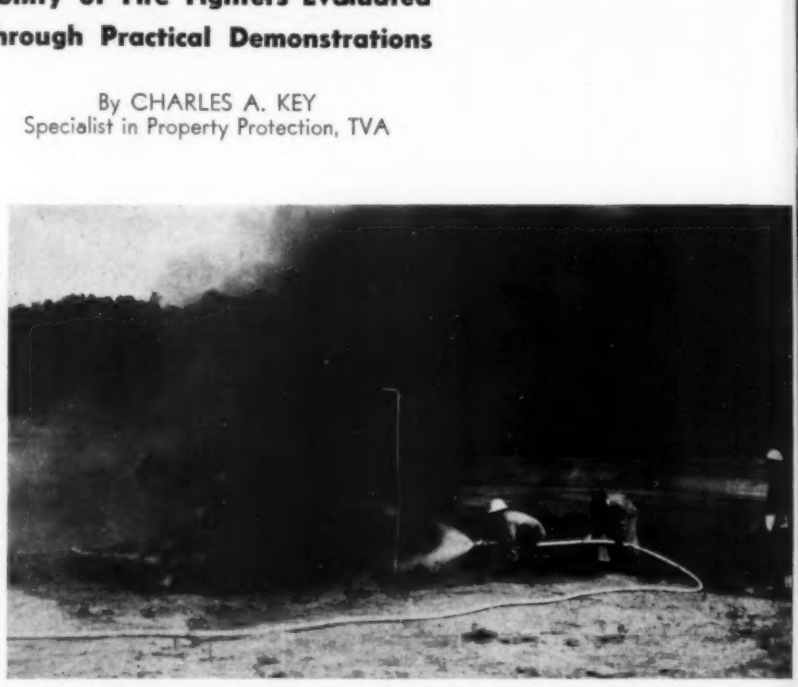
Ability of Fire Fighters Evaluated Through Practical Demonstrations

By CHARLES A. KEY
Specialist in Property Protection, TVA

WITH the advent of the large steam plants into its power system, TVA realized it faced multi-fold construction fire protection problems. The plants would be the largest of their type in the country. Powerhouses such as Shawnee in western Kentucky, for example, would be 104 feet high, 260 feet wide and 882 feet long, and during construction would present a mass of A and B hazards, with some C's thrown in for good measure. Accessory facilities—offices, shops, warehouses, camps, villages, infirmaries and the like—sprawled over several hundred acres about the powerhouses.

As each project began it was brought into the continuously operative TVA-wide fire inspection and prevention program. Suppression strategy centered around portable extinguishers, intricate raw-water standpipe systems in the powerhouses and three-stage quads on which were also installed dry-chemical hose and reel assemblies. Combination—solid stream and fog-nozzles were used almost exclusively with hose lines and high-pressure guns were mounted on the booster lines. Wet water was standard for the booster tanks, and in some instances wet-water proportioners were used.

The men who would operate this equipment were the Public Safety Service, TVA's uniformed fire protection force. But few of them had been assigned out and out fire duty since World War II construction days. Fewer still knew anything about water fog. None had experience with dry chemical and wetting agents. Some—usually a nucleus at each project—were regulars transferred from other locations. Many were re-employees, who had been laid off in reductions after World War II. Some were fresh recruits. The whole, including supervisors, made a group largely untried and untrained on steam plant fires and ultra-modern fire fighting equipment.



Firemen advance upon fire at a crouch, using high velocity water fog. Rating instructor stands to one side with evaluation sheet to check performance.

Firemen prepare to advance upon three-sided layout of oil drums with two drums in middle, all filled with oil, primed with gasoline. There are three drum halves on each side, end to end, and two in the middle of the square.

These men had to be trained. The problem was: How? Would TVA go back to the pre-war routine of dry-runs and equipment drills? The answer was, yes, but only to a limited extent to familiarize personnel with fundamental usage of the tools of their trade. What about fire schools on the order of those set up by the Navy. Much too costly, for even one centralized school. Besides, several large projects were pending, and training was a continuing process. It would be impracticable to send each new recruit possibly several hundred miles for indoctrination training, then not have some means of continuing his training at his home station. (However, one supervisors' and instructors' school was held at New Johnsonville Steam Plant in 1951. A small fire structure was erected at a cost of about two hundred dollars. This structure was subsequently used by Johnsonville Public Safety Service for the duration of construction. Selected supervisors were—and are—sent, each year to state schools and FDIC, the only expense being that of room and board.)

What then? Surely there were means of having realistic training without costly structures. How about used motor oil, spiced with fuel oil and primed with gasoline? Disposal of old motor oil was always a problem around the projects; so it might as well be burned. And salvage automobile and truck tires, worn beyond possible resale? And scrap lumber? Thus it was. And from the beginning efforts were made to keep realism up and costs down. The only costs of

the fire materials were for the several gallons of fuel oil and gasoline used at each drill.

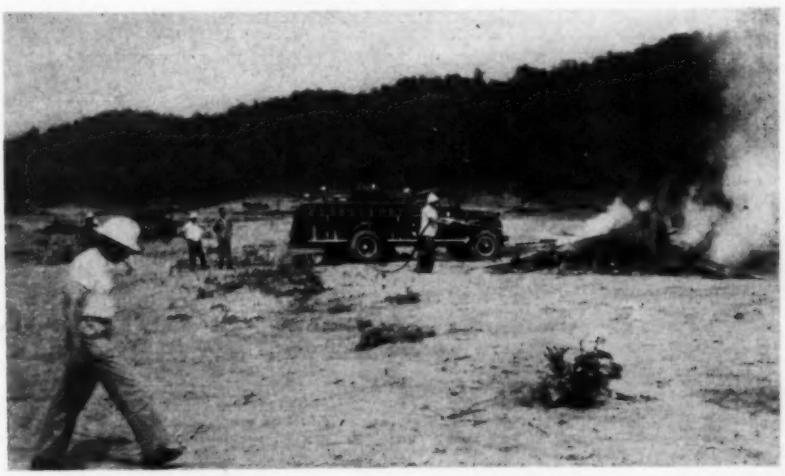
At first pits were used for the oil fires. These were scooped out by bulldozers, and the size depended on the enthusiasm of the dozer operator. Some were merely shallow depressions. Others seemed nearly as big as a YMCA swimming pool. Whatever their size, they left unsightly holes in the ground and were muddy lob-lollies after the first fire. But worse of all, the sides soaked up oil like sponges. Then a fire fighter at Kingston Steam Plant thought of splitting 55-gallon oil drums lengthwise. The drums cost about two dollars each. Each halves laid end to end in a rectangle would outline the perimeter dimensions of a pretty fair sized room. Filled partially with water and an inch or two of oil and gasoline, they made interesting fires.

The drums had several advantages over pits, or even tanks. They could be loaded into a pick-up truck and taken to any desired drill areas. After the drill they could be hosed down and hauled back to the station. There was no water or oil absorption in the sides. Separated from each other by the "freeboard" of the sides and ends, each half was a fire in itself and had to be put out separately. There was no blanket extinguishment as in a pit or tank, although a couple might be extinguished simultaneously with an applicator. By exercise of a little ingenuity, practically any desired layout could be arranged. They could be laid in squares or rectangles with inner partitions. By adding angle-iron legs, they could be easily made into double or triple decker affairs. By torching off two or three old automobile or truck tires in the center of one of these set-ups, fires of formidable proportions could be had. TVA used all of these, and it was not uncommon to require two or even three inch-and-a-half lines to bring the fires under reasonably prompt control. If a number of fires were to be run off, slop-overs were controlled by using less water in the bottom of the drums. But if slop-overs did occur, the resultant spill fire only made the problem more interesting. The only complication was that drainage had to be checked in advance of the drill.

Alternating between fog and jet, fire is under control, practically extinguished in less than one minute.

"Graduation Exercises"—Firemen advance upon scrap lumber, oil drums, and in the background, scrap tires, all burning simultaneously. Rating instructor checks performance.

Pumper makes timed run to burning scrap lumber pile. Fire fighters are evaluated on time, selection and extinguishing method and technique. Pumper arrives; two-man team decides to use high pressure gun.



Jet stream, loaded with 2 per cent wetting agent hits fire and starts taking effect.

Salvage auto and truck tires were, in themselves, intriguing fire problems. A half-dozen sedan tires or three truck tires, soaked with oil, primed with gasoline, and given a five or ten minute preburn, made fires that were rather difficult to completely extinguish without using wetting agents. After the rubber became molten and the fabric started burning, Class A and B elements were present, and the firemen had to act accordingly in their suppression efforts. Usually the tires were brought to the smouldering point, then allowed to rekindle for the next fire. Surprisingly enough, dry chemical extinguishers in the hands of an expert put out the fires on a number of occasions. But in each such case, the operator was in for a hectic several minutes.

Scrap lumber was fixed in large loose piles and soaked with oil. Lumber use was limited by the fact that it became water logged after a few fires. Wetting agents could not be used until final and complete extinguishment was desired. It was used principally to demonstrate Class A suppression principles.

While firemen were becoming familiar with equipment and gaining self-confidence in their ability to handle hot fires, they were also practicing on hose evolutions and fire streams. Training emphasized the use of high-pressure fog guns with detergent-treated water, and inch-and-a-half hose combinations mostly involving high and low velocity fog. The firemen were also instructed in use of the larger lines for the possible conflagration; and with the special equipment such as the dry chemical reel which would be useful for transformer fires, or for oil and gasoline storage blazes.

In addition to pumper and accessory equipment training, instruction was given in portable extinguishers. This centered on inspection, maintenance and use. Suppression drills were held on small A and B fires. Extinguishers of varying size and type were mixed together, and the firemen were drilled in prompt selection and correct technique.

Training was carried out on a half dozen projects at once, from Shawnee Steam Plant in western Kentucky to Boone Dam in upper east Tennessee. The training plan seemed soundly designed, but its effectiveness depended upon supervisors and instructors concerned with many other problems of the multi-faceted Public Safety Service program on large construction projects. The Director of the Division of Reservoir Properties who is responsible for planning and application of TVA protection, from his office in Knoxville, Tennessee, wanted to be kept informed as to the progress of fire training. So a training check and evaluation plan was devised which involved first hand inspections by divisional staff members. The inspection was divided into two parts:

1. A verbal quiz of eighty-five carefully selected questions. The questions were of the following type:

a. *Project familiarity*—hydrant locations, hydrant pressures, water system capacity, alarm system, fire alarm response procedure - - -.

b. *Chemistry of fire*—classes of fire, extinguishing principles, heat transmitting - - -.

c. *Theoretical fire suppression and techniques*—definitions of effective streams, several types of water fog, friction loss; hose and water weight, use of wetting agents, ventilation - - -.

d. *Portable extinguishers*—Theories of inspection, maintenance and use - - -.

e. *Fire engines and accessories*—Knowledge of equipment carried on apparatus, hose maintenance pumper operation - - -.

All project fire service members participated in the quiz. They were checked either "right" or "wrong" on their answers. Individual and total unit scores for the five major headings were quickly determined and, in this manner, unit and individual deficiencies were ascertained.

2. Field drills were held utilizing available fire suppression equipment. Evolutions were run with and without fires. The fires were of the type described in the foregoing portion of this article, i.e., oil drums, scrap lumber and salvage tires. Immediately prior to the drill the unit supervisor was given the drill procedure, although he had been notified several days in advance as to materials needed for the drill. He conducted the drill according to the drill procedure, which generally was set up as follows:

PUBLIC SAFETY SERVICE
EVALUATION - FIELD FIRE TRAINING

Project _____ Date _____

Officer	Quiz Question*					Fire Drill*							
						Pumper	Hose-Nozzle	Fire Streams	Ladders	Time Runs	Live Fires	Port. Ext.	Misc.
1.	-	-	-	X	X	-X	-X---	-		-			
2.	X	-	X	X	X	-	-X----	---			-X		
3.	X	X	-	X	X	-	--	-X			X-	- - -	
4.	-	-	-	-	-		--	-			- -	- - -	
5.	-	-	-	-	X	-X	-	-X			- -	- - -	
6.	X	-	-	-	X	-	-	-			-X	- - -	
7.	X	X	-	-	X	-	X.	---			X--		
8.	-	X	-	-	-		-	--			X--		
9.	-	X	-	-		X-	X	--X			-		
10.	-	-	-	-	X	X	X	--			-X		
11.		X	-	-									
12.													
13.													
14.													/
15.													
16.													
17.													
18.													
19.													
20.													

Total Questions Asked 50 Total Items Checked 84

Correct 30 (60%) Incorrect 20 (40%) Satisfactory 67 (80%) Unsatisfactory 17 (20%)

*For Quiz Questions or Fire Drill a check mark indicates a correct answer or satisfactory performance; a cross mark indicates an incorrect answer or unsatisfactory performance.

Quiz Questions

1. Unit displayed satisfactory knowledge of project as a whole, but could be improved as to essential details of firefighting water system such as hydrant pressures, capacity of system, pump operating procedures and the like. (Questions 1-24)
2. Adequate knowledge of fire chemistry demonstrated. (Questions 25-30)
3. Need "skull practice" on fire techniques and suppression. (Questions 31-62)
4. Adequate knowledge of portable extinguishers. (Questions 63-73)
5. Need instructions on fire engine equipment and care and maintenance of hose. (Questions 74-84)

Fire Drill

1. The three fundamentals of fire training are to familiarize and develop proficiency in use of equipment, to develop confidence in ability and in equipment, and to dispel fear of fire. Regarding the latter, there certainly was no evidence of nervousness or apprehension in the face of the hot training fires. In fact, nozzlemen had to be cautioned repeatedly about advancing too rapidly for rate of heat absorption and reduction by water streams. This coupled with a certain amount of awkwardness in hose and nozzle play indicates a need for further training in proficient use of equipment.
2. Several instances were noticed where pumper operators evinced uncertainty in operating the pumper. Time lags in building up pressure and volume and errors and omissions in operating procedures could have been costly at fire scenes. Rather concentrated training on pumper operation is indicated.
3. Quite satisfactory performance is shown in prompt and correct selection, operating knowledge, and fire suppression technique in portable extinguisher portion of the drill.

DRILL SHEET

_____ Steam Plant

Date _____

Pumper

1. Large scrap lumber pile be doused with gasoline and oil and set fire 15 minutes before timed run.

2. Officers———and———: Timed run from headquarters to fire. Make proper hook-up and extinguish fire. Score on:

Speed _____
Pumper operation _____
Hose layout _____
Firefighting technique _____

Hoze and Nozzle

1. Officers———and———pull off five sections 2½-inch hose and reload.

Score: Hose load _____

2. Officers———and———demonstrate with 2½-inch hose:

2-man doughnut roll _____
Officer———, carry and snap-out _____
Officer———, 1-man doughnut roll _____
Officers———and———, factory roll _____

3. Officers———and———demonstrate with 2½-inch hose:

2-man connection and break _____
1-man connection and break _____
Explain and demonstrate use of double male and double female connections _____
One-way reducer _____
Wye-gate with one section 1½-inch hose on each outlet _____
1½-inch fog nozzle, insert 4-foot applicator _____

Ladders

1. Officers———and———demonstrate:

2-man ladder carry _____

(*Continued on page* 619)

Fire Service Ventilation in Principle and Practice

Part IX—Forced Ventilation
(Use of Mechanical Air Movers)

By ROI B. WOOLLEY
Assistant Editor

Editor's Note: Of all of the phases of fire service ventilation, that about which the least appears to be known is the application of mechanics to the removal of contaminated atmospheres, and their replacement by fresh air. Mechanical, or forced air circulation and ventilation, is not new. Ever since the advent of the electric motor made possible the rapid movement of quantities of air by means of powered portable and stationary fans, this nation has witnessed the broadening of the application of air movers to improve and safeguard working and living conditions.

Forced application of air long ago was found to speed and intensify combustion, as well as to accelerate cooling. Modern heating and air conditioning systems depend upon mechanical movement of air. In large areas of this nation, household cooling and ventilating is dependent upon mechanical air applications, either built-in, or portable types. And it may be said that very few electrified dwellings throughout this country today are without some type of electric fan or air circulator for cooling and ventilation purposes.

Perhaps the greatest progress in applied mechanical air movement has been in industry. As our manufacturing processes became more complicated and more hazardous, the need of venting areas of contaminated atmospheres and dusts, from the processing of raw materials to finishing of completed products, became more acute. This has resulted in a vast and varied development of air circulatory devices and systems, many of which unfortunately are little known to the fire fighter, notwithstanding the fact that these devices or systems play an important part in his efforts to control a fire or save lives in occupancies where they are installed. An entire textbook could be written on the principles and applications of these mechanical air conditioning and ventilating devices (actually they are synonymous in most respects) as related to fire hazards, fire propagation, spread and control. Because of lack of space, we can only attempt to touch on the high points of the subject.

The author is greatful to the many fire chiefs who have submitted case histories of their application of mechanical ventilation, and to the manufacturers of power air movers, for their willing co-

ANYONE who has followed the series on Ventilation thus far should by now be convinced that the products of combustion—smoke, heat and gases—constitute the chief obstacles to prompt fire attack and extinguishment, not to speak of the rescue of persons from occupancies involved by fire.

By now it should also be clear that what we term ventilation, i.e., the removal of these handicaps and their replacement by fresh atmospheres, is essential to successful fire control, at least in fires of any magnitude.

Finally, we hope it is likewise apparent that ventilation may take different forms and be performed in different ways, and most important, *that no two fires in different occupancies can be ventilated identically* because of the numerous variables that confront the fire fighter in every fire control operation. Thus there is no "standard" approach and method for performing the operation of ventilation and the conclusion should have been reached ere this that *improper ventilation may be worse than no ventilation at all.*

Pursuing this reasoning still further, the methods and technique employed in ventilating at fires should be adapted to and be adequate for the task in hand.

It may be that natural, or manual, ventilation will suffice for the vast majority of fires encountered today. Some authorities list these as all fires that can be extinguished by a single 2½-inch line or less. They also point out that of the remaining fires—said to be about 2% of the total—which may call for everything a fire chief has or can borrow, many may be of a magnitude such as not to require any ventilation because they may have to be fought from the outside and with them it is more a matter of *defense* than *attack*. This apparently doesn't leave much latitude for applied mechanical or forced ventilation yet most fire chiefs will agree that there is rarely a serious fire (from the viewpoint of smoke, heat and gases), where something besides natural or manual ventilation would not be of assistance.

Another point which we have discussed and with which most experienced fire officers will agree, is, that proper ventilation not only is an adjunct to fire attack, but it helps to reduce smoke damage to the property immediately involved, and to *expose* occupancies. This is a post-fire asset which has already been discussed in FIRE ENGINEERING.

Chief Fred J. Wells of Fargo, N. D. says "We know from our experience that natural ventilation is not sufficient nor is it enough for the speedy removal demanded if a reduction in smoke damage is to be desired (speaking of serious fires). This is true where a high cubic content of smoke is present. Also we cannot depend upon it for a complete

New York Fire Department used this ejector back in the 30's. Hydraulic type smoke remover set up at the Republic Theatre fire, December 30, 1938. Note covering used to seal openings around the air duct. This was essential to prevent "short circuiting" the device with fresh air when intake tube was not immersed in smoke-charged area.

removal because wind velocity and direction and atmospheric conditions may be against us."

"To overcome this difficulty," he asks, "what are we going to do? Smoke extraction through and by the use of mechanical smoke extractors is the answer."

But the value of mechanical ventilation does not stop here. It enters even more vitally into situations where it is necessary to rid premises or areas of dangerous fumes and gases to protect human life. Fire may or may not be involved in the situation but there may be serious hazards in the contaminated atmospheres which call for the immediate application of every possible means of rapid, thorough ventilation.

So we find there is no apparent rule by which to determine just when natural ventilation leaves off, or is insufficient, and forced, or mechanical ventilation should begin. This again emphasizes a point previously iterated, that *rapid and thorough size-up is the first essential in any form of fire service ventilating.* Before treatment there must be diagnosis.

When May Forced Ventilation Be Necessary?

Let us look into some of the conditions that indicate the need or possible use of mechanical ventilation (in all of which size-up plays a part).

1. The type of structure involved is unsuitable for natural ventilation—
   a. Lack of overhead or exterior openings or means of venting.
   b. Lack of shafts or other arteries for vertically channelling off contaminated atmospheres. Lateral, or side venting may be limited or impossible, also.
   c. Construction may be such that opening of roof or walls (by breaching) may be hazardous to life and property.
2. Natural ventilation may expose adjoining or nearby occupancies to smoke or fire damage (i.e., a hospital may be located down wind). It may be necessary to attempt counter-wind ventilation.
3. For some reason, natural ventilation cannot be *controlled.*
4. Type of occupancy (such as chemical) is such that uncontrolled, natural ventilation may cause fire to burn more fiercely and dangerously.
5. A life hazard may be involved which requires ventilation beyond the means of manual, or natural air replacement. Heavy concentration of fresh air may be required in an area, or to move dangerous accumulations of fumes from pockets, or to clear passageways where natural drafts are impossible. Forced venting may be required where speed is vital.
6. There may be no fire, but it may be necessary to quickly purify contaminated, toxic atmospheres, such as in tunnels, wells or other closures, where because of atmospheric, weather or other conditions, natural ventilation will be inadequate or too slow.

What Are the Advantages of Forced or Mechanical Ventilation?

Some of the reasons for employing powered or artificial ventilation are indicated in the foregoing. Here are a few other advantages:

1. Mechanical ventilation should insure closer control of ventilation.
2. It can augment and supplement natural ventilation.
3. It speeds up attack and rescue by accelerating removal of smoke, heat and gases.
   a. Factors which contribute to the operation of natural ventilation, such as the extreme mobility of the air; its ability to pass through small openings under pressure; its tendency to rise when only slightly heated; and the general movement of outdoor air as wind, may not apply under some conditions and powered air movers should be the only answer to offset any of these limitations in natural venting.
4. Safeguards crews engaged in rescue, search and fire extinguishment, and affords greater protection to those who may be in need of rescue.
   a. Even where breathing apparatus is used (and it should be employed in conjunction with most inside venting operations) density of smoke and/or degree of heat encountered may handicap natural ventilation operations. Mechanical air movers may correct these conditions by increasing visibility and reducing heat content with the affected area.
5. Mechanical ventilation may be employed where other means of conditioning contaminated air, i.e., subways, ships, tunnels, vaults, etc., are impossible.
   a. Forced ventilation may be the only safe way to expel or exhaust certain hazardous contaminants, such as heavier-than-air explosive atmospheres, etc.
6. Enables a fire department to better adjust and shape its ventilation procedures to meet the individual venting requirements that arise in any fire or rescue incident.
7. Smoke, and in many cases, water damage, often more serious than fire damage, may be materially reduced.
   a. Air movers used in conjunction with deodorants and odor-dispellants further salvage and reclamation.

What Are Disadvantages?

Throughout this series we have repeatedly stated that misdirected, misapplied and uncontrolled ventilation can be more harmful than no ventilation at all. This applies to all forms of ventilation, natural and mechanical.

Mechanical ventilation is effective when controlled. Uncontrolled, or wrongly applied, it can be even more hazardous than misdirected manual ventilation. That is because it has behind it a mechanical force.

Some of the hazards or disadvantages of power ventilation are as follows:

1. Misdirected application can stimulate and accelerate the fire, by providing it with oxygen, and at the same time creating a draft for it in short by "fanning" it.

Machine developed by Minneapolis Fire Department shopmen from ideas of former Chief Charles Ringer, shown at its quarters, and in trial operation. Note how building opening for suction sections is sealed off.

Boston's "smoke pump" in full operation—Year 1927.

2. In "pulling smoke away" from the fire, it can pull the fire along with it, extending it into lateral areas.

3. The forced injection of air may increase the hazard of backdraft or smoke explosion, or "push" the fire ahead of it.

4. Mechanical ventilation is dependent upon power, for the most part, electrical. Cessation of that power may have serious repercussions, by endangering crews working inside, or persons waiting to be rescued, who are dependent upon the supply of fresh air delivered to them under pressure.

5. The science of mechanical ventilation is too little known; there is a dearth of factual information on the subject. Few fire departments have experimented with it. Too few have attempted to adopt it in their standard fire control procedures. In short, powered venting is still a mystery to the average fire officer.

6. There is a decided lack of proper mechanical facilities, such as air movers smoke ejectors and injectors, exhausters, circulators, fans, blowers, etc., within the fire service (this bears somewhat upon the prevailing ignorance of mechanical ventilation).

7. The subject of mechanical of forced ventilation is seldom considered, and rarely included, in the curriculum of fire schools and colleges. Lack of knowledge and training in the subject has tended in some cases to bring out its disadvantages and has failed to disclose the advantanges. Such progress as has been made has come about through pioneering by progressive individual fire departments and is not the result of collective study and experimentation.

8. Interruption of essential power supply may prove serious (this point is discussed elsewhere).

Types of Mechanical Ventilation Equipment

We have broadly reviewed the advantages and limitations of mechanical or forced ventilation. It is in order to have a quick look at the types and kinds of facilities that play a part in such operations.

It is difficult to classify these by any particular type; they are all "air movers" of sorts; they can be fixed, or portable and most of them are powered electrically.

Purely for convenience we have grouped them under (1) Smoke ejectors, exhausters, extractors, blowers and injectors; (2) Fans and circulators and (3) Air movers, compressors.

Taking first what is generally recognized throughout the fire service as the "smoke ejector" (called in France and other European countries the "cellar ventilator").

It is said that a portable hydraulic "cellar ventilator" has been in use in Paris for over 50 years. In the 1930's each pumping engine of the Paris Fire Department was equipped with one of these devices which weighed about 50 pounds and consisted of a small, water-motor-driven blower. Water had to be delivered to the water motor through the hose connection at pressures greater than 30 PSI. The motor drove a rotor mounted on the same shaft. Capacity of the unit was 25 CFM at approximately 1,500 RPM. The air was blown through reinforced canvas hose. The device was not designed to extract air as well as inject it.

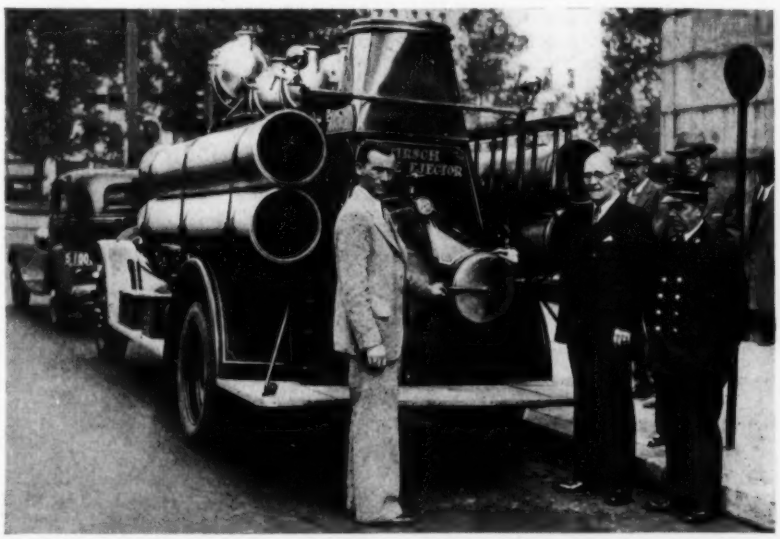
Some time later, the Paris Fire Department developed a larger electrically driven "ventilator" which could be made to both draw smoke and blow air. This apparatus is intended for use at serious fires, and to supplement the hydraulic blowers upon occasion, such as in serious cellar and sub-cellar fires. It is retained at headquarters and dispatched on call. It can discharge as well as draw air in considerable volume.

In the year 1915 Fire Chief Charles W. Ringer, then head of the Minneapolis Fire Department, sought to find a way to reduce the punishment his firefighters were taking from smoke and gases. He had his shop engineers built what he termed a "smoke extractor" taking the basic idea from a planing mill fan used to pick up shavings. In their experiments they found that the larger the intake, the greater the air displacement. They used a 14-inch flexible steel suction (the largest size that could be placed through a basement window).

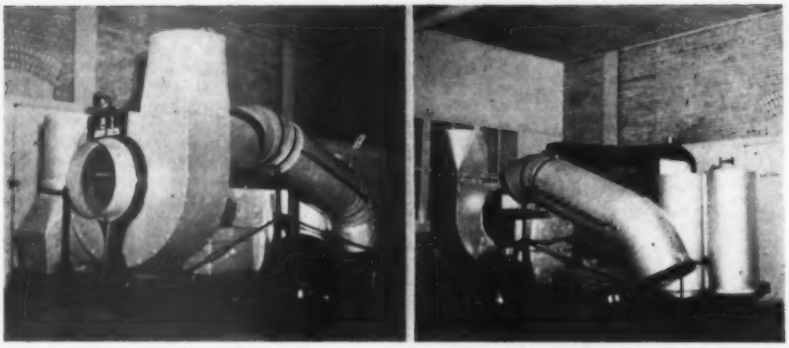
The machine consisted of a large blower mounted on an automobile truck chassis operated by the motor of the truck. The unit which had a displacement of 5,000 CFM, was tested at the State University but Chief Ringer wanted still greater initial displacement. Two suctions were then used, giving a displacement of 11,800 CFM. A finished unit was then built and this responded on first alarm to all boxes in the congested district. It was later withdrawn from first alarm response and used only on special call.

Chief Ringer reported it most effective where a building could be opened from two opposite ends. The smoke extractor was set at one end and it drew the smoke and fumes from the further end and did not "fan the fire" until it had drawn all the smoke up to the point of the fire. The hosemen with their line, used to work into the building, following the withdrawal of the smoke, until they reached the fire.

The Minneapolis Fire Department, now headed by Fire Chief R. C. Malmquist, still has a smoke ejector. In 1947 the then Chief of Department, George S. Lockhart, used the machine at the front door of the Happy Hour bar, to remove smoke from the building during a fire which resulted in the death of one man. The fire broke out in a grease chute over a broiler and was believed extinguished by employes with a hand extinguisher, who then turned on a suction fan to draw out smoke. The circulator is believed to have spread the fire through concealed spaces. While fight-



Said to be the first heavy duty smoke ejector installed by an American volunteer fire department, this Peter Pirsch unit created much attention in Washington where it is being shown by Chief Noble Rusho of the Hyattsville, Md., Fire Department, the proud owners, to former District of Columbia Chief George S. Watson and Deputy Chief O. E. Fern. Besides serving as a smoke ejector, the unit had six floodlights, a 2-KW generator, two reels of 200 feet of cable and other equipment.



Ingenious shopmen of the Grand Rapids Fire Department adapted this blizzard silo to fire service ventilation needs. It worked!

Photo courtesy Los Angeles Fire Department

This Homelite portable is being used to clear heated smoke and gases from a basement area. It can be operated as a blower and when so used, serves the secondary purpose of delivering fresh air to men operating in confined spaces. Here the unit is exhausting smoke and fumes via cellar shaft opening.

ing the blaze, a hanging ceiling fell, killing one fireman and injuring others. Here was a case of where a fixed ventilating system caused spread of a fire and the fire fighter's ventilating system was used in combating the blaze.

Along about the time Chief Ringer was experimenting with his smoke exhauster, Fire Chief E. F. Dahill of New Bedford, Mass., was working on a portable device, somewhat similar to the blowers used in Paris, except that his invention was designed to remove contaminated air from a building rather than inject, or feed fresh air in. His unit had a sheet iron adjustable intake pipe and was operated by water pressure (80 to 100 PSI).

Perhaps the mechanical smoke ejector which received the widest publicity was that designed and built by Peter Pirsch, in Kenosha, Wis. This was developed about the time of Chief Ringer's creation and made history at the Chicago Tunnel fire in 1931. The efficiency of this operation is attributed to the machine's 18,000 CFM displacement. The tunnel was 17 ft. in diameter and about half a mile long, and contained approximately 150,000 cu ft. of smoke, according to Mr. Pirsch's statement to FIRE ENGINEERING. The smoke ejector gained on the smoke production at the rate of 6,000 CFM, or in other words, it took out the smoke at 6,000 CFM faster than the fire produced it and in 23 minutes the smoke had lifted off the floor so that 16 men escaped to the elevator.

The smoke, extracted mechanically from the tunnel, left a tar-like residue in the metal suction tubes ⅛-in. thick, after pumping seven hours to completely clear the tunnel of smoke and fumes. Sometimes the suction tubes got so hot they could not be touched. These were cooled by water from the unit's own first aid water tank and pump.

This unit operated by electricity from generators mounted on the chassis. The current could also be used for operating saws, hammers, cutting, welding, drilling, air compressors, etc.

Shortly after this experience, the Peter Pirsch & Sons Co. began commercial production of smoke ejectors, one of the first units in the East, and believed to be the first mechanical smoke ejector used by volunteers, being purchased by the Hyattsville, Md., Volunteer Fire Department. This was delivered in late 1933.

In 1927 (FIRE ENGINEERING, Dec. 14, 1927 issue) the Boston Fire Department installed a "smoke-pump" at quarters of Engine Company 6, after witnessing tests in the headquarter's yard. The device had a motor which operated hydraulically, and a fan connecting to a section of sheet metal pipe. The smoke-pump was connected to a hose line and when the unit was placed in operation it reportedly drew the smoke out of a sample smoke house. The product was somewhat similar to the one devised by Chief Dahill.

In 1932 the late Chief Selden R. Allen of Brookline, Mass., devised a "smoke exhauster" which was built for his department by the B. F. Sturtevant Company of Boston. It consisted of a water motor to operate on 85 PSI, connected to a fan. The device reportedly operated satisfactorily at as low as 35 PSI. It had handles and could be carried by two men. A 9-inch reinforced rubber hose was connected to the inlet side of the fan and the other end of the hose was thrust through a convenient opening into the burning building. A hose line was laid from a convenient hydrant to the water motor. After the water had passed through the motor it was either wasted or used to extinguish the fire. By connecting a 4½-in. suction line to the outlet of the fan leaving the fan inlet free the device could be used to blow fresh air into a structure.

Method Employed by Sacramento Department

The advent of these and other smoke and air movers stimulated other fire departments to further develop the idea of mechanical ventilators. In Sacramento Captain L. C. Moore of that city's Fire Department invented a smoke exhauster which employed a 3-cylinder, 4-cycle radial airplane motor for driving the airplane propeller, which constituted the blower. The unit was built either for portable use or fixed mounting. Captain Moore had his convictions as to the best methods of mechanical venting. He said: "I believe that the exhaust fan is far ahead of the blowing method. When fresh air is blown in, it is blown in from only one opening, and the results may be hazardous. It would start the fire upward through any opening. When an exhaust fan is put into operation it is placed at one opening and drafts of fresh air enter the room through a number of openings. Thus, in this case the conditions are reversed.

He acknowledged that there was lack of understanding as to the proper use of a smoke ejector, claiming that a study of the best methods of ventilation would change the minds of many who believe the blower is better than the exhauster.

Captain Moore's theory was that when a smoke ejector is used in the front of the basement of a building, openings must be made in the rear, never in the front where the exhauster is drafting. The openings close to the exhauster should be made air tight, for if they are open, he maintained, the air will travel directly to the fan carrying little or no smoke with it, thus "short-circuiting" the operation. Openings on the opposite side of the basement from the ejector should be made as soon as possible. The fresh air coming in from these openings travels across the basement to the exhauster, carrying a large amount of smoke with it.

Windows on the same end that the exhauster is operating from should never be opened until working conditions permit, he claimed, and emphasized

(*Continued on page 592*)

NEW HAVEN HAS TRAINING SCHOOL AND FIFTH ANNUAL EXHIBITION

New Fire Protection Products Demonstrated; Full Program Provided

THE New Haven Fire Department, Chief Thomas Collins, climaxed the week-long session of the Connecticut State Fire College with the Fifth Annual Exhibition and Fire Fighter's Field Day, at the Department's Training Ground on May 21 and 22.

The State Fire School, which was directed by L. W. Eddy, supervisor fire service training, had the largest attendance in its history, Members received certificates on the afternoon of the 21st. Most of them remained to enjoy the opening of the Exhibition that evening. They were joined by several hundred visiting firemen.

On Saturday, the 22nd, more than 1500 were registered by the New Haven Fire Department, most of the visitors remaining until the final curtain.

Featured on Friday evening stage presentation were demonstrations of explosion proof electrical equipment, by the Crouse-Hinds Company of Syracuse, N. Y.; color movies of the H-Bomb; displays of fire detection devices by Fyr-Larms Co., and Fireye Corp.; and first showing of new asbestos aluminum foil heat-resisting garment and firemen's hood, by Industrial Safety Specialties Co. Latest types of the new Cycle-Flo air breathing masks were also shown.

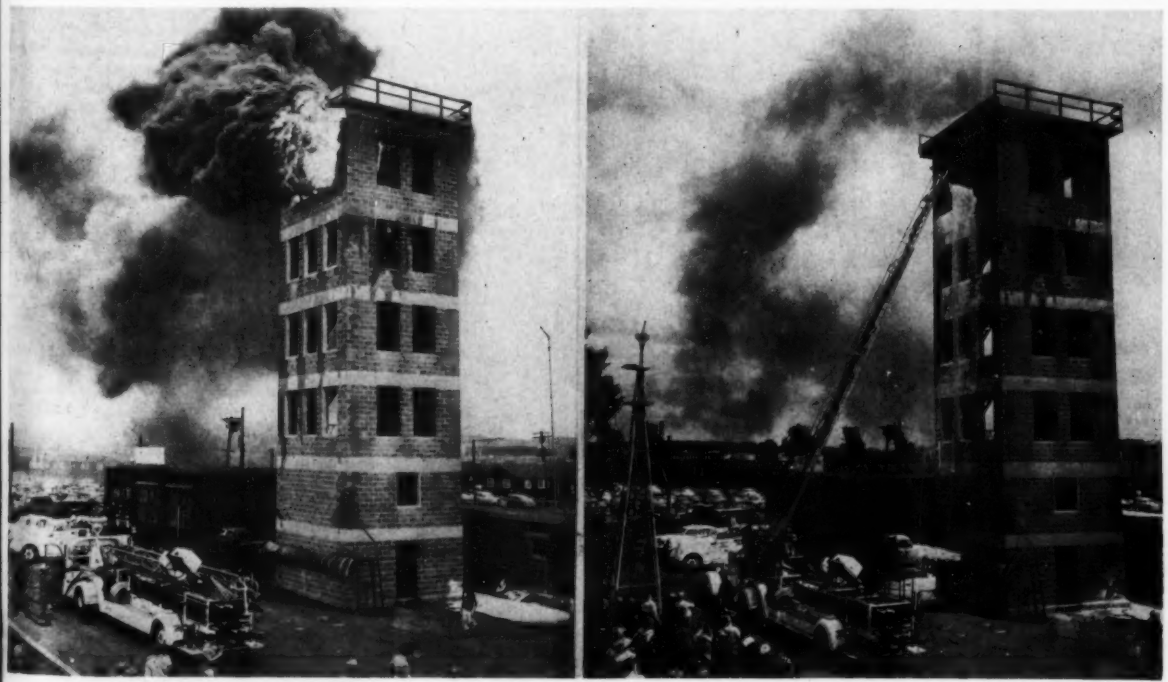
One dramatic demonstration after another in Saturday's program kept the throng occupied from 9:00 A.M. until 4:45 P.M., with time out for lunch, prepared by the New Haven Fire Department.

Three of the first large scale fires involved a 10,000 gal. railroad tank car over a shallow pit loaded with solvents and oil. The first fire was extinguished in 13 seconds by the Orange, Conn., Fire Department crew using their own pumper and hookup. Then Engine 12's men (N.H.F.D.) demonstrated their skill in the roaring fire No. 2, the time of total extinguishment being 35 seconds. Then a crew of non-professionals recruited by Safety-First Co. directed by Jerry Fleming snuffed out another hot fire in 16 seconds. A second installment of this blaze later was put out in the record time of 10 seconds.

The spectators and even New Haven's professional fire fighters got a surprise, when 1½-tons of magnesium shavings was ignited. Wet ground and other factors gave it an explosive "send off" that drove a crew of hosemen into quick retreat. The radiated heat was felt 300 feet away from the fire, which resembled a miniature A-bomb blast.

An amusing skit, "Atomic Fire Fighting" was staged by "thespian firemen," who showed how a scorching pit fire could be put out by a gent replete in full evening "tails and topper," while reclining nonchalantly in an easy chair (using a low velocity fog head). "There musta been some trick to it," muttered some of the disbelievers. There followed an exhibition of extinguishing oil fires

"Painting" a building with latest type of fog-foam at New Haven training ground.



Left: Drill tower fire at New Haven at its height. Right: Fog-foam stream, after fire had been extinguished.

by air agitation, after which a number of pit fires were extinguished in record time, using high pressure and low velocity nozzles operated by volunteers and professional fire fighters. Various types of Rockwood low velocity and Hardie HP nozzles were demonstrated.

The morning session was capped by an exhibition of heavy duty fog projected from two N.H.F.D. aerial ladders, and from the department's deluge truck and trailer. Ladders 1 and 2 each mounted two 500 GPM Rockwood nozzles while two 1000 GPM heads were operated from the deluge units. Despite the heavy wind, a dense fog pattern rising nearly 100 feet into the air, and covering several hundred square feet, was generated. Fire companies from West Shore, West Haven, Hamden, E. Hamden and the Annex aided New Haven units in this operation.

Two other dramatic demonstrations highlighted the morning sessions. One was the application of two latest type fibreglass-aluminum foil and asbestos heat-resisting garments by Fire Chief Flores of the Allentown, Pa., Fire Department, and Battalion Chief Andrew Flanagan of the New Haven Fire Department. These men casually strolled through searing flames (jet fuel and gasoline), estimated to reach 1800 deg. F., without discomfort. The new Cycle-Flo breathing unit was worn under the hoods. The second thriller was the effort by the East Meadow, L.I., Fire Department Racing Team to break hose laying and ladder climbing records. No records were shattered but one axle on the racing rig was broken. Despite this, the split-second speed demons of East Meadow staged a remarkable demonstration.

Radio-operated Fire Alarm Box Shown

A new radio-operated fire detection system and fire alarm signal box was demonstrated by its inventor, Ambrose Salmini of Yonkers, N. Y.

The afternoon saw a number of demonstrations of "spot" extinguishing methods by Rockwood Sprinkler Co., using fixed fog foam installations. Several new fire department tools were demonstrated, one the O'Brien Rotary Cutter, which tore through a heavy double floor to make a hole large enough for a cellar pipe in a matter of minutes.

New Haven training ground showing type of aluminumized asbestos and glass-fibre insulate suits worn by Chiefs Flores of Allentown, Pa., and Flanagan of New Haven.

The 10,000 gal. tank was again the scene of dramatic extinguishing exhibition when the one-man operated "Little Mo" fog and fog foam unit of Army Armstrong knocked out several fires using the large Rockwood FFF nozzle atop the cab. One heavy fire was extinguished in 1 min. 5 sec., and another in even less time. Only 80 gals. of water were applied in the first, and 20 gals. in the latter blaze.

No New Haven Training session would be complete without an exhibition of top-story fire extinguishment. And again, the department staged a breathtaker when it ignited solvents on the 6th floor level of the drill tower. Efforts to extinguish the roaring fire with chemicals proving unavailing in the high wind, New Haven firemen raised an 85 ft. ladder and quickly subdued the blaze with fog foam.

The session wound up with a smoky building fire in the training building, to demonstrate the various means of ventilating such a structure, use of breathing apparatus, fog and fire detection systems.

"Spot" fire extinguishment by fixed fog system at New Haven training ground.

Matches Defeat "Skin, Blood and Skill"

The newspaper (*N.Y. News*) heads the story *"Barbara's Fight to Live Fou Despite Skin, Blood and Skill."* Behin the story of the death of two-year-ol Barbara Jackson of Elmont, L.I., whic came at 7:15 P.M. June 3rd, is a recor of brave but futile attempts to make u for a moment's tragic misuse of a simpl household match.

Barbara, one of 13 children of Joh Jackson and his wife Bertha, of Elmon found a box of matches on May 16 la and toddled into the family car. There she lit one of the matches, and droppe it back into a box.

In an instant she was a living torch her clothes aflame from knees to neck Barbara was removed from the car b a passing motorist, Edward Lerner o Argo Village, Queens, who beat out th flames. She was rushed to Meadow brook Hospital where doctors did every thing possible for her; she was give blood transfusions and placed in a oxygen tent to ease the strain on he over-taxed body but she grew steadil worse.

Physicians thought there was a chanc —just a slim chance, that the youngste might survive if given skin grafts. Bu donors were scarce. Then the paper took up Barbara's case and told the readers the pathetic story of Barbara' slim chance for life. Only the Kath Fiscus tragedy, perhaps received suc publicity, and as in Kathy's ordeal, generous public was quick to respond.

Scores of well-wishers, most of them strangers to the Jackson family, offered skin even though they knew it meant weeks of hospitalization for themselves Hundreds more offered blood.

On Tuesday June 1 when physician thought Barbara might be able to under go the grafts, and aware that the little victim could not survive without them Barbara was given skin from three donors. But all the skill of those at tending doctors and nurses, and all the devotion of the hundreds who hurried to answer the appeal of press and radio failed to save burned Barbara.

A mite of a girl . . . a match . . . a moment of carelessness and one more added to the lengthening list of child casualties suffered by consuming fire.

NEW ENGLAND CHIEFS STRESS SYMPOSIUMS AT CONFERENCE

Many Timely Problems Discussed; Round Tables to be Extended at Future Meetings

A Staff Report

ALL records for attendance continue to be shattered by the New England Association of Fire Chiefs. The 4-day 32nd Annual Conference, which concluded June 24th last, saw 772 fire chiefs, their wives and visitors, registered at the Hotel Wentworth, Portsmouth, N. H. with a total attendance during the week exceeding 900.

For the ninth consecutive time, the Association has chosen Wentworth-by-the-Sea for its gathering, and its final action, following election of the officers for the coming term, was to again select the famous summer resort hotel for its 1955 conference. The dates, June 20, 21, 22, 23.

The Association, with a membership of nearly 1300 from the States of Maine, Vermont, New Hampshire, Massachusetts, Rhode Island and Connecticut, took direct action on a number of important matters, in the form of unanimously adopted resolutions, following lengthy discussion of all factors involved.

This year marked a major trend in the Association's business and technical sessions by reducing the number of lecture subjects and instead devoting the time to Round Table or, as some chiefs term them, "work sessions." At the conclusion of the Conference the members voted unanimously to give even more time to this type session in 1955.

The four-day Conference was opened by President Henri E. Fortier of Manville, R. I., on Monday afternoon with welcoming addresses by Mayor Theodore R. Butler and City Manager Robert C. Violette of Portsmouth, and Fire Chief Ralph G. Seavey, Rochester, N. H., President of the New Hampshire Fire Chiefs Club. Chief John F. Adams of Milford, Mass., responded to the welcomes. Chief Henry G. Thomas, of Hartford, Conn., President of the International Association of Fire Chiefs, speaking to the overflow assemblage, reminded the delegates of their responsibilities in the relentless fight being waged to hold down the nation's tragic fire losses and urged them to even greater cooperation in fire prevention endeavors.

The Rev. William W. Lewis, of the Unitarian-Universalist Church of Portsmouth and chaplain of the Portland Fire Department, delivered a eulogy for deceased members of the Association. The Chapel Quartette rendered appropriate musical selections. The impressive services, in which the names of those who died during the year were read off, were held in the Hotel's grand ballroom.

On Monday the New England Division, International Association of Fire Chiefs, met and transacted routine business and elected officers for the coming term. They are: President, Chief Albert W. Kimball, Hingham, Mass.; First Vice-President: Chief Thomas F. Gorman, Quincy, Mass.; Second Vice-President: Chief Lewis A. Marshall, Providence, R. I; Secretary-Treasurer: Chief Alfred H. Koltonski, Rutland, Vt.; Director to I.A.F.C.: Chief Albert Kimball; Sergeant-at-Arms: Supt. L. C. Walden, Worcester, Mass.; State Vice Presidents, Maine: Chief Allen F. Payson, Camden; New Hampshire: Chief G. N. Guevin, Manchester; Massachusetts: Chief John F. Adams, Milford; Rhode Island: Chief A. J. Cote, Woonsocket; Connecticut: Chief Stuart M. Potter, Greenwich; Vermont: Chief John E. Keefe, Bellows Falls; Andrew Palmer, of Woonsocket, R. I., was named Press Representative and the Chaplains elected were: Rev. Michael F. Collins, Dorchester, Mass., and Rev. John P. Fitzsimmons of Belmont, Mass.

The International's new general manager, John D. Gerletti, was introduced to the Conference and spoke briefly on what the Association is doing in the interests of the nation's fire services.

Business and educational sessions occupied all of Tuesday, with addresses by Edward P. Johnson, division service manager, Suburban U.D.I. Company, Portland, Me., who took for his subject "Some Facts About L. P. Gas"; Carl W. Irwin, M.D., Bangor, Me., whose topic was "Occupational Disability"; Howard S. Russell, Massachusetts State Representative, Member of Recess Commission on Fire Safety in nursing homes, hospitals and institutions, who spoke on "Life and Life Safety in Con-

I. A. F. C. President Chief Henry Thomas, Hartford, Conn.; Chief G. N. Guevin, Manchester, N. H., State Vice-President, I. A. F. C., and Chief Albert W. Kimball, Hingham, Mass., President, New England Division I. A. F. C.

Officers and Directors, New England Association of Fire Chiefs. From left to right (first row), John Keefe, Bellows Falls, Vt., First Vice-President; George Graham, Bristol, Conn., President; John W. O'Hearn, Watertown, Mass., Secretary-Treasurer; Howard Jose, South Portland, Me., Second Vice-President. Middle row (from left to right), Directors Oliver T. Sanborn, Portland, Me.; A. J. Cote, Woonsocket, R. I.; Francis Dagon, East Hartford, Conn.; Alfred Koltonski, Rutland, Vt.; Clarence Green, Concord, N. H., and Thomas Slamon, Wellesley, Mass. Top row (from left to right), Roi B. Woolley, FIRE ENGINEERING, Technical Consultant; The Rev. Michael F. Collins, Dorchester, Mass., Chaplain, and William J. Dooling, Watertown, Mass., Sergeant-at-Arms.

Panel sessions featured the business and educational program of the New England Association of Fire Chiefs' Conference. Here are the "experts" of the Tuesday morning meeting: Left to right are Chief Stuart Potter, Greenwich, Conn.; Chief Lewis Marshall, Providence, R. I.; Chief John Corcoran, Newton, Mass.; Chief Roi Woolley, FIRE ENGINEERING (moderator); Chief John Keefe, Bellows Falls, Vt. (substituting for Chief Anthony Malloy, Nashua, N. H.); Chief Richard Holmes, Windsor, Vt., and Chief Clinton Murray, Cape Elizabeth, Me.

Questions and answers flew thick and fast at the Wednesday session. Here Chief John Keefe answers a question from the floor. Others in panel are (left to right) Chief Francis Dagon, East Hartford, Conn.; Chief Otto Alletag, Warren, R. I.; Chief Arthur Flynn, Salem, Mass., Chief Roi Woolley (moderator); Chief Keefe; Chief Walter R. Messer, Keene, N. H., and Chief Richard Frates, Bath, Me.

valescent Homes" and was followed by Edward C. Drake, assistant personal director, Factory Mutual Engineering Division, Boston, Mass., who dwelt on "Industrial Fire Hazards."

Two other important papers were also delivered during the Conference. They were: "Arson," by Captain Daniel A. Murphy, Massachusetts Department of Public Safety, and "Civil Defense" by Kyle Laughlin, Federal Civil Defense Administration, Washington. Edward R. Chasson, Supervisor, sales promotion and training, New England Telephone and Telegraph Company, presented the position of his company on the controversial subject of "telephone fire reporting" and endeavored to answer questions fired at him by delegates on such subjects as the telephone company's responsibility in handling fire alarms; the possible effect that strikes would have on commercially operated fire communications; the problems of service and maintenance and the possible reduction of false alarms should telephones be substituted for the accepted fire alarm signal box system now in use.

Nearly half of Tuesday, the 22nd, was given over to consideration and discussion, pro and con, of pertinent questions presently affecting the fire service. A panel of six fire chiefs set the pace for audience participation in the discussion sessions. Those participating were: Chiefs Clinton H. Murray, Cape Elizabeth, Me.; Chief John Keefe, Bellows Falls, Vt. (substituting for Chief Anthony J. Malloy of Nashua, N. H.); Richard C. Holmes, Windsor, Vt.; John E. Corcoran, Newton, Mass.; Lewis A. Marshall, Providence, R. I., and Stuart M. Potter, Greenwich, Conn. Chief Roi Woolley, Assistant Editor, FIRE ENGINEERING acted as Moderator.

Among the more important questions reviewed and debated were:

1. "What can be done to control the false alarm problem. The concensus of members was that the Association should participate in the surveys currently being conducted, and cooperate with the I.A.F.C. Of the dozen and more chiefs participating, several told how they had reduced malicious false alarms by educating citizens and youngsters.

2. "Will the fog nozzle displace the solid stream nozzle or the 2½-inch straight stream?" The discussion brought forth many compliments for water fog and fog nozzles, but a unanimously negative answer.

3. "Where can instructions for the proper operation of fire service radio be secured?" The answer was in the new Manual of Radio Procedure for the Fire Service, now being printed by the I.A.F.C.

4. The question was raised about the recent death of a rescue squad member in New Jersey following his attempt to use a form of breathing apparatus underwater. The discussion elicited the fact that the victim in question was not properly equipped and trained in the equipment used, and the accident could not be attributed to the use of the apparatus itself. Men should employ only suitable equipment and take all necessary precautions when engaging in any underwater operations, it was urged.

5. "Why doesn't the insurance rating division allow credit for radio communication equipment installed in fire departments?" A member of the New England Rating Board stated that this question is being studied and it is expected proper credit ultimately would be given.

Interesting sidelight of the conference was an exhibition of underwater use of demand-type air apparatus.

6. "Should Civil Defense take over in peacetime emergencies?" This question received an unqualified "No."

7. "What has been done to improve firemen's training—and what should be done?" A number of chiefs reviewed their training problems, and plans for the future. The top account was that of Eastern Connecticut firemen who recently set up a training ground at Willimantic, Conn.

8. "Should blowtorches be used in the removal of paint?" It was disclosed that there is a difference in flame paint removers and that state regulations vary as to their use. After lengthy discussion of the question, the Resolutions Committee was requested to submit for adoption a resolution opposing the use of blow torches for such operations. This resolution was later adopted unanimously.

On the following day another Panel of fire chiefs, with Chief Woolley again acting as Moderator, continued the "work sessions." Again the questions and answers brought forth considerable discussion. Among the more important reviewed were:

1. "What is being done to protect fire apparatus with insurance?" Different states have different statutes, it was disclosed. There is no standard coverage. Fire Departments of one state successfully use a demerit system. The need for broader and better coverage was generally agreed.

2. "How are departments meeting the need for more manpower?" Perhaps the most discussed question of the Conference brought forth many unsolved and solved problems. It was agreed that the critical need for more men is handicapping efficient operations, contributing to larger fires and fire losses, reducing morale among personnel, and necessitating drastic re-shuffling and reshaping of fire fighting forces. It was emphasized that with fewer men, more intensive training is necessary to improve firemanship efficiency and that time and labor saving devices must be developed to enable fewer men to do better work. This subject will receive further consideration by the Association.

3. "How can the small town chief con-

(*Continued on page 600*)

INTENSITY OF DWELLING FIRE INCREASED BY PLASTIC TILES

Tile Covering Kitchen Walls and Ceiling of Rockford Home Melts and Burns

By F. D. LUNDBERG, Inspector
Bureau of Fire Prevention, Rockford, Ill.

RECENTLY a homeowner of Rockford, Illinois, turned from his television set and proceeded to go down to the basement to chop some kindling. On his way down, he turned the switch for the basement light and thus set off a chain of events which was to render his family temporarily homeless.

When he turned the switch, he caused a short circuit that started a fire within the walls. The fire traveled up the walls between the studdings and mushroomed in the ceiling of the basement stairway.

Less than five minutes after he had gone downstairs, his wife, who was sitting in the kitchen with a neighbor, noticed flames in the basement landing. She called down to her husband and he immediately ran up the stairs and began pulling down the clothes which were hanging in the basement hallway.

Failing in his attempt to save the clothes from the flames, the homeowner ran into the kitchen where the plastic tiles, which had recently been installed on the kitchen walls and ceiling, were starting to burn.

From this point on, the spread of the fire was so rapid that the people who had been sitting at the kitchen table were literally chased out the kitchen door by the flames. As he went out onto the porch, the homeowner looked back at the kitchen which was then completely ablaze and, to quote him in his own words, "It was raining fire." This effect was caused by the melting and dropping of the burning tile from the ceiling.

Rockford F. D. Photo by Lundberg

Miss Norma Baggio, office secretary, holds samples of partially burned plastic tile taken from wall of kitchen.

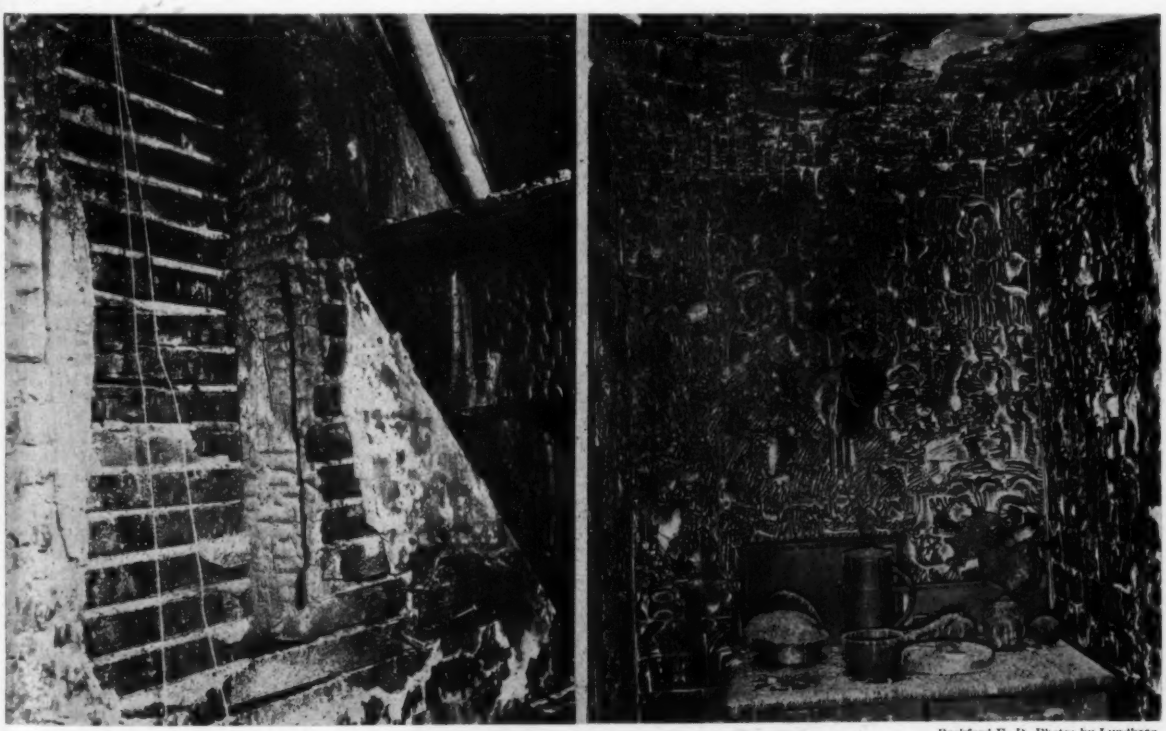
Although the fire confined itself mainly to the kitchen, the entire first floor was extensively damaged due to the dense smoke and intense heat from the burning tile. The plaster in the adjoining rooms had been discolored and had loosened to such an extent that replastering was necessary.

We believe that the fire damage could have been minimized if the application of the plastic tile had been confined to the lower half of the room. Also, the post-fire investigation disclosed that 30 amp. fuses had been used on the branch-circuit side of the meter which delayed the "blowing" of the fuse that serviced the basement light.

Blaze Damages Fire Truck

A 20-year-old fire truck—the "newest" of the two pieces of apparatus of the city of Rogers, Ark., was badly damaged by fire while fighting a grass fire last April. Fire Chief Jacobs said oil and grease on the underside of the vehicle ignited.

The city council has authorized the expenditure of $800 to recondition the damaged truck, and place it in stand-by. Meanwhile, with the city "protected," by a single vehicle (vintage of 1919), the cities of Springdale and Bentonville, Ark., are cooperating to provide additional fire protection. An election will be held shortly to vote on a bond issue for new apparatus.



Rockford F. D. Photos by Lundberg

Left: Defective wiring in wall caused fire when switch for basement lights was turned on. Right: How fire melted mastic, dropping burning tiles onto floor. Note solidified mastic hanging from ceiling.

ATLANTA FIREHOUSE ENDANGERED BY BUILDING EXPLOSION

Downtown Explosion and Fire Damages Station No. 4; 4-Alarms Sounded; Loss Heavy

A Staff Report*

A FOUR-ALARM fire literally 'tumbled into the lap' of firemen of Fire Station 4 of the Atlanta, Ga., Fire Department early Thursday, March 25th last, when a terrific explosion blew out the front of a five-story building in downtown Pryor street.

It was just about midnight. Most of the crew of No. 4 were abed. The fireman on watch was talking to a patrolman, who had just tried the doors of the building across the street and said that everything was all right. Another member of the crew was in the rear of the station watching television.

The firehouse is opposite Nos. 50-56 Pryor street NE, which at that point runs southwest to northwest and makes a turn to north and south, directly in front of the station. The building which erupted fronts more or less southeast whereas the station faces due west. This simple fact perhaps saved the station and its crew because the bulk of the wall which blew out, tumbled away from the main door of the old fire station (incidentally the oldest in the Atlanta Fire Department, having been built in 1888). As it was, bricks fell on the firehouse, smashing the metal awning over the front, and came through the apparatus door and the window under which stood the fire alarm watch desk. Had the main part of the wall fallen in front of the station door, the company would have been mouse-trapped.

With the blast from the building and crash of falling bricks and timbers, the man on watch headed for the rear of the station, while the fireman at the rear abruptly left his TV and headed for the front, both men believing the old firehouse building itself was collapsing.

No. 4 station, besides being the oldest of the city's firehouses, is a very narrow, deep station, the rear originally having been used as the fire department shops. The rubble piled in front of the doorway temporarily blocked the response of apparatus from No. 4.

The site of the explosion and fire was a five-story brick joist building, housing the Baskette Piano Co., Atlanta Book Store and two publication firms. Its location in the midst of other old, ordinary joist constructed occupancies constituted a serious conflagration hazard. Pryor street at that point is only about 30 feet in width and, filled with debris from the explosion as it was, it was impossible for fire fighters to make a close-up frontal attack.

The explosion is believed to be the result of ignition of accumulated gases from a fire that orignated on the lower floors or basement, and traveled up the two elevator shafts in the structure. Following the blast, the fire quickly involved practically the entire structure.

The desk watchman of No. 4 sounded a "observation alarm" which was received at fire alarm headquarters at 12:01 A.M. Almost coincidently with this, Box 14 at Broad and Luckie, Box 293 at Fairlie and Poplar, and Box 13 at Peachtree and Auburn were sounded.

A second alarm (by radio) followed in two minutes; meanwhile Ladder and Engine 5, normally second-alarm units, were special called by the dispatcher in advance of the second alarm, when the signal office was notified by No. 4 that it could not respond because of debris in the street. However, further investigation by No. 4's crew disclosed that it was possible to take out the apparatus over the rubble, and this was done.

A terse summary of fire fighting operations, submitted by Captain Steve B. Campbell, of Ladder & Engine Co. 5, gives an idea of what the responding fire forces were up against.

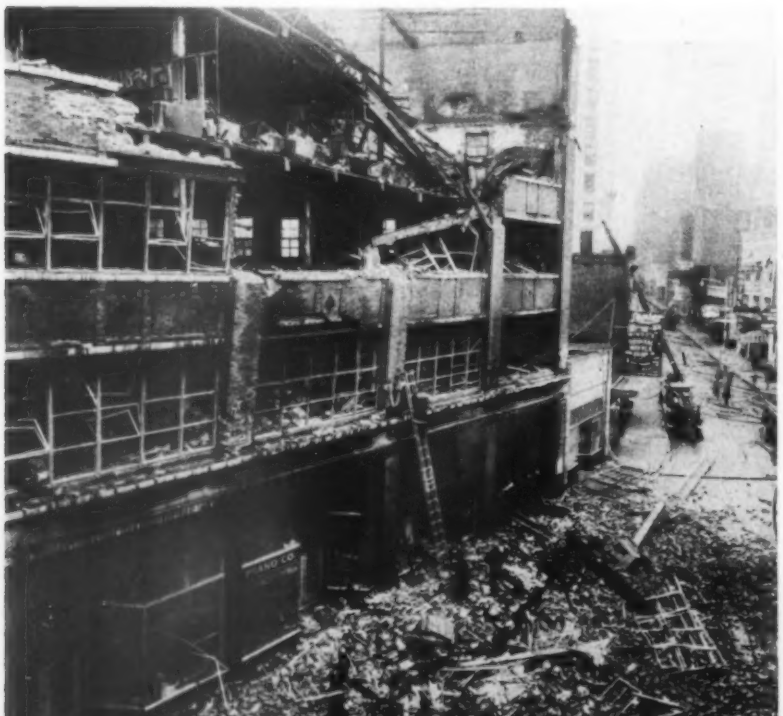
Captain Campbell says that all companies responding to the multiple alarms were directed to go to No. 4 Fire Station. His Company (No. 5) is located about 10 blocks from No. 4 at 278 Trinity ave. S.W., and when his units turned from Trinity street into Pryor street, it looked as though No. 4's quarters were completely involved. This observation prevailed until the crews were within a block of the fire, when it was seen that the property across the street and not the station, was involved. Anxiety persisted, however, for the fate of No. 4's men until fellow-firemen were informed all had gotten clear.

No. 5's two units upon arrival at Prior and Auburn, one-half block south of the fire, were ordered to proceed to the Peachtree side and operate to protect exposures at that point. The aerial ladder was raised to a three-story clothing store, and lines from Engine 9 and other units (4 in all) were siamesed into a Grant Multiversal Nozzle, using a 1¼ in. tip with 150 PSI pump pressure, to provide a heavy stream from the top of this structure. Three other hand lines were quickly placed in operation at this point and, later, two more. The wind at the time was blowing from the northeast to southeast and the combustible exposures were in extreme danger.

At this time, large quantities of blazing paper were being carried by the moderate wind. At one time, a burning ember fell into the bed of No. 5's truck and ignited a mop, but this incipient blaze was quickly extinguished by a member of the ladder company crew.

Other responding units were ordered to strategic points, some of them later operating in the doorway of No. 4 Station, and large streams were directed onto the fire and to protect the exposures.

In all, 38 hose lines were used, including four deluge pipes, in this operation. All 13 engines that fought the blaze were 1,000 GPM centifugal types (incidentally, the last of the depart-



Debris-clogged Pryor street following explosion and 4-alarm fire that temporarily blocked response of fire fighters of Engine 4 (extreme right). Firemen prevented possible conflagration.

*The Editors acknowledge the helpfulness of Capt. Steve Campbell, Eng. & Lad. 15, Atlanta Fire Department.

Fire fighters attack blaze from front door. Hose lines run through quarters of Engine 4, Atlanta, being operated on threatening blaze directly across narrow Pryor street. Note watch desk of firehouse, built in 1888.

ment's rotary gear engines was retired from active service about the first of 1954). All the ladders at work were aerials, and all were raised.

Fire Chief C. C. Styron and Assistant Chief H. G. Pierce directed the battle with the fire. Only one fireman was injured. He suffered a back injury when thrown against a fire truck by a hose that got out of control.

The fire, the first major downtown blaze since 1950, was brought under control about dawn, but fire fighters remained on the scene for many hours, helping extinguish smoldering embers, and tearing down loose walls with heavy duty fire streams and cable, and clearing flooded basements of accumulated run-off.

Property losses were reported in excess of $300,000, considerable smoke and water damage being caused to adjoining exposures.

Chronology of Response

12:01 A.M. Observation alarm (Desk watchman No. 4 Station) Engines 1-3-4-6-8; Ladders 1-4-8; Rescue Ambulance: Light Truck; Second Asst. Chief H. G. Pierce. (Also Boxes 14, 293, 13.)

12:03 A.M. 2nd and 3rd alarms (combined) by radio. Engines 7-5-11-9; No ladders. Chief C. C. Styron. Re-locating Lad. & Eng. 16 to No. 3; 17 to 5; 17 to 1; 23 to 16; 27 to 7.

12:12 A.M. 4th and 5th alarms (combined) by radio. Engines 10-12-15-16 No ladders. Re-locating: Eng. 14 to 1.

12:29 A.M. Special call, Ladder 7 (by radio). Re-locating: Lad. 16 to 8; Eng. 2 to 9; Chief Batt. 3 to 8; Chief Batt. 2 to 5; Lad. & Eng. 19 to 11.

12:40 A.M. Recall for off-duty platoon.

12:57 A.M.-2:10 A.M. Reserve Engs. as follows: 2 to 8; 25 to 17; 21 to 15; 5 to 3; 22 to 16; 23 to 11.

3:45 A.M. Special calls for Department of Construction; Department of Water.

4:00 A.M.-4:10 A.M. Special calls for City Building Instructor and Arson Investigator.

5:53 A.M. Special call for Fire Marshal.

1:29 P.M. Fire rung out.

Signal operators on duty: J. G. McEver and V. J. Poss.

New Film on Tornadoes

Release of a new 16mm. documentary color film on windstorm damage, has just been announced by the National Board of Fire Underwriters. Entitled "The Wind and the Fury," it shows the effects that windstorms, particularly tornadoes, have on life and property. Running time is 15 minutes.

Windstorms are threats in all parts of the nation. When communities suffer severe damage, the greatest single factor in rebuilding is the losses paid by insurance.

The footage for the film was shot immediately after last year's tornadoes in Waco, Texas; Columbus, Ga., and Worcester, Mass. Scenes showing how communities have rebuilt were shot in these three cities and in Flint, Mich.

An outstanding feature of the film is the narration, which consists for the most part of actual voices of tornado survivors. On-the-spot tape recordings were made by the National Board with the full cooperation of the windstorms' victims. The production was supervised by J. Wendell Sether, manager of NBFU's public relations department, who did much of the photography.

"The Wind and the Fury" is available in black and white to TV stations. Color prints are also available for schools, clubs and civic organizations. Requests for bookings should be made to the Bureau of Communication Research, Inc., 13 E. 37th Street, New York 16, N. Y. Those living west of the Rockies should write to The National Board of Fire Underwriters, 465 California Street, San Francisco.

New Mexico Firemen Elect

At the recent meeting of the New Mexico State Firemen's Association the following officers were elected: President, Chief Pat Kane, Kirtland Air Force Base, Albuquerque, N. M.; First Vice President, O. H. Hawkinson, Grants, N. M.; Second Vice President, Asst. Chief J. T. Crane, Portales, N. M.; Third Vice President, Chief L. A. Rigsby, Walker Air Force Base, Roswell, N. M.; Secretary-Treasurer, F. W. Wynn, Hobbs, N. M. (re-elected).

Albuquerque, N. M., was chosen as the 1955 convention city.

Formosan chief studies American Volunteers.

Ching Li Liu, Deputy Commissioner of fire and police of the Island of Formosa, visited Westchester County, N. Y., and Fairfield County, Conn., fire departments recently as part of his study of American volunteer fire fighting methods. He was also the guest of the International Association of Fire Chiefs, Manager John Gerletti arranging his itinerary. Here Commissioner Liu is pictured at Greenwich, Conn., fire headquarters (left to right) with Deputy Fire Chief Henry P. Crawford, Chief Stuart M. Potter, Police Chief John M. Gleason, and Deputy Police Chief David W. Robbins.

News of the Manufacturers

Ansul Adds "Pull-it"—a Handy Extinguisher Cart

This rubber-tired ball bearing cart, known as the "Pull-it," has been designed by Ansul Chemical Company, Marinette, Wis., to transport the company's dry chemical fire extinguishers quickly to the scene of a fire.

Particularly suitable for use where fire hazards are dispersed over large areas, the unit can easily maneuver narrow factory aisles. The 30-pound extinguisher which it mounts can be equipped with six feet of rubber hose, permitting operation of the extinguisher from the cart.

Ansul extinguisher cart.

The device is 44 inches high, 16 inches wide and 13 inches deep and weighs 16 pounds net.

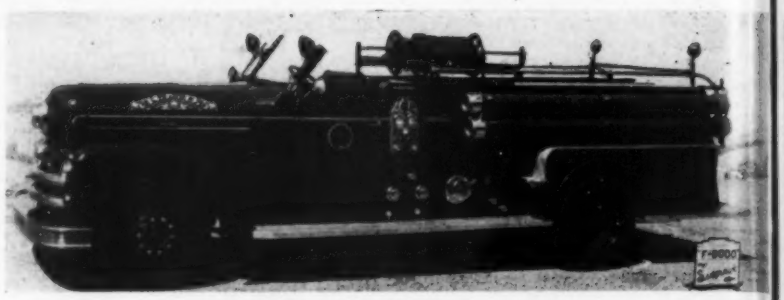
Industrial Fire Fighting Unit

"Fire Fighter," a compact, highly maneuverable, one or two-man in-plant fire truck, introduced by Kalamazoo Manufacturing Company, Kalamazoo, Mich., recently underwent tests during which it handily extinguished oil fires, pit fires, high octane gas fires, etc.

"The 3-wheel unit is built to help eliminate serious weakness in current plant and warehouse fire protection systems," according to Henry C. Hauk, president of the company.

The unit is designed to speed essential fire fighting equipment through narrow aisles and standard doors at 15 M.P.H. with its full equipment of 210 gallons of water, 100 ft. of booster hose, rotary pump, foam concentrate, extinguishers, and forcible entry tools. It can be equipped for complete high pressure fog systems as desired.

New industrial plant fire fighting unit.



Honolulu Gets 1,250 GPM Seagrave Pumpers

This is the latest of nine 1,250 GPM Seagrave pumping engines delivered to the City of Honolulu, Hawaii. In addition to these units, the fire department also has six 1,000 GPM pumpers, two 500 GPM units, one 750 GPM pumper, and two 85-foot Seagrave aerial ladders. H. A. Smith is Chief of the progressive Honolulu Fire Department.

New Lightweight Portable Stretchers

Many new and different model stretchers for any type of accident or emergency case are manufactured by the Washington Mortuary Supply Company of Washington C. H., Ohio.

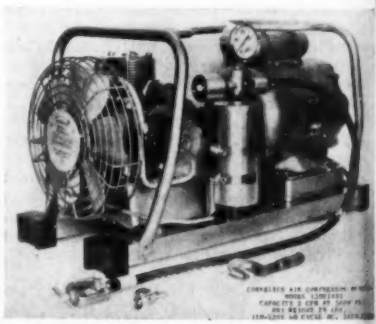
The Washington firm has manufactured ambulance and first call equipment for 30 years serving funeral directors and ambulance operators over the entire country and has the reputation of building first quality equipment.

Being aware of the fact that more and more the firemen, police and volunteer rescue squads are handling most of the emergency runs in the larger cities, suburbs and smaller villages, Washington has concentrated on more of the portable type equipment preferred by the squads, where previously their main line was almost entirely the four wheeled cots for ambulances operated by the funeral homes.

Almost ninety-five per cent of their manufacturing is out of heat treated duraluminum which is light, and has strength and durability.

Portable Compressors for Demand Type Breathing Equipment

Owners of demand type breathing apparatus, such as Scott AirPak and MSA respiratory equipment, will be interested in the line of lightweight, portable high pressure air compressors introduced by The Cornelius Company, 550—39th Avenue, N.E., Minneapolis 21, Minn.



Portable high pressure air compressor for charging respiratory equipment.

The new units are available with electric motor or gasoline power source and are reportedly the first actually portable high pressure compressors developed for this type fire department use.

Miniature in size, the units provide versatility for "on-the-spot" charging of portable cylinders as well as air storage tanks. The 32 series includes two models, which provide 0.6 CFM of free air and have a rated discharge pressure of 2500 PSI. Each assembly weighs less than 50 lbs. complete with power source. The 130 series also includes two models which will deliver 2 CFM of free air and have rated discharge pressures of 3000 PSI. The latter series is recommended for users of larger air volumes or where it is necessary to maintain pressure in a cascade storage system.

The Cornelius Company has just issued an interesting Product Sheet (No. 5) describing fully the two series and four models now available and giving useful design and performance data. It may be had by addressing the company.

FWD trucks delivered to Canadian Army.

Canadian Army Takes "FWD"

The Canadian Army recently took delivery of a fleet of FWD Class "A" Triple Combination pumpers like those pictured above. They are rated at 800 GPM, equipped with 200 H.P. engines, 2-stage centrifugal pumps, low pressure fog systems, Hydroblenders and aluminum ladders.

The chassis and body were made in Canada and are the first to have a torque proportioning center differential with automatically proportioned engine power one-third to the front axle and two-thirds to the rear axle in accordance with weight distribution of the vehicle.

The units have been distributed to army bases throughout the dominion.

New Fire Hood Protects Face and Head

A new fireman's hood with built-in safety helmet has been announced by Industrial Safety Specialties Co., Perkasie, Pa. Designed specifically to protect the fire fighter's head, face and neck against the hazards of heat, and falling debris, the new hood should find acceptance amongst municipal, industrial, marine and airport fire forces.

Fireman's hood of aluminized asbestos.

The hood is fireproof throughout; its specially aluminized asbestos construction reportedly reflecting over 80% of the heat away from the head and face of the wearer.

To help protect the head from falling objects, a fully adjustable hard, safety hat is riveted into the top of the hood. Also riveted in place is the aluminum frame and ¼" laminated safety glass window. This measures 5" x 6¾", affording wide vision.

The hood weighs less than 5 lbs. and is roomy and pliable, permitting full freedom of movement even when breathing apparatus is worn. It can be quickly donned and removed.

New Fire Truck Embodies Novel Features

An unusual four-in-one fire truck, now being built by American-Marsh Pumps (Canada) Ltd., Stratford, Ont., and sold by the Safety Supply Co. of Montreal, combines the features of a water-carrying pumper, an aerial ladder truck, a life-saving truck, and a foam truck. The unit was ordered by Fire Chief Albert Lamonde for Thetford Mines, Que., a city of 20,000 population.

Based on a chassis with a 200 H.P. engine, the pumping equipment includes an American-March four-stage DMF Model 750 g.p.m. pump capable of delivering high pressures, all intermediate high pressures and large volume water supply. The body contains a 500 gallon water tank, and also houses a separate portable auxiliary fire pump which can be operated either on or off the truck.

It is equipped with a cloth all-weather "convertible" top. Body compartments contain a complement of fire extinguishers, fire fighting tools and a separate 110 volt A.C. electric generator which powers the portable floodlighting system.

As a ladder truck, the unit includes an unusual 65-foot electrically powered aerial ladder fitted with a telephone and built-in combined deluge, straight stream and fog nozzle at the ladder's end. A full complement of ground ladders is also included.

As a life-saving and disaster truck, the unit carries life net, resuscitator, air packs and smoke ejectors.

If required, the truck can deliver 5,000 gallons of foam without an outside source of water.

Another feature is a complete electric sanding system for assuring maximum tire traction on icy road conditions.

Residence Fire Gets Good Start

Fire Chief Floyd Stout of the Tatamy, Pa., Fire Company and fire fighters who fought a losing battle with a fast spreading fire that destroyed one of Tatamy's oldest houses late in the afternoon of March 18th last, have been unable to determine how the fire could so quickly involve the structure.

The ancient frame dwelling on Main street, Tatamy, was owned and occupied by two tenants, both of whom lost all their possessions, except the clothes they wore.

The fire was discovered at 4:20 P.M. and apparently originated in the rear of the house and driven by a strong northwest wind, it quickly swept through the building. One of the owners had left the house only 15 minutes before the fire was discovered. It is possible the fire had been burning for some time before discovery.

Twenty Tatamy firemen quickly responded to the alarm and were soon assisted by Nazareth fire fighters who were called to aid by Chief Stoudt, who directed the struggle.

Five hydrant streams were played on the blazing structure but it was beyond saving. The debris continued to smolder and Tatamy firemen remained at the scene until 9:45 P.M. Total property loss was estimated at $20,000.

The Bushkill Valley Lion's Club started a campaign for funds, clothing and other necessities for the stricken families.

Fire Chief Raul Gandara (left, rear), head of the Puerto Rico Fire Department, with officials of the New York Fire Department, the Howe Fire Apparatus Company and General Motors Corporation, witness tests in Manhattan of a Chevrolet-Howe pumper prior to delivery to the Puerto Rico department.

A Record Run Recalled

Fire department speed records, except those in volunteer firemen's tournaments, are not being attempted, these days. But back in the early days of the automotive fire engine, as in the horse era, there was considerable rivalry to see who could make the fastest response and get water on a fire, or simulated blaze.

Many of those old records were bordering on what appeared to be the impossibile. Down through the years some of these records, like the fish stories, have grown with the telling until today it is difficult to believe any of them.

One record response—if not *the* record, has been checked and verified by FIRE ENGINEERING's correspondent, and historian of the Colorado Springs, Colo., Fire Department, Lester L. Williams, M.D.

According to his data, about 1915, a company of that department was said to have responded to a simulated alarm, traveled one-quarter of a mile, taken a fire plug, laid out some hose and gotten water in one and one-quarter minutes.

E. R. Townsend, engineer of the National Board of Fire Underwriters heard of this speed while visiting in Colorado, and called on the late Chief Patsy McCartin to verify the time. Accompanying him was L. A. Barley, engineer of the Rocky Mountain Underwriters Association. Chief McCartin affirmed the time as reported was correct, but he refused to order the men to repeat the trial, because there was a certain element of risk involved.

Captain Lorraine and his crew at the old central station, 18-20 South Nevada Avenue, discussed the time trial, then volunteered to repeat the run, and expressed confidence in their ability to better their previous mark. They made careful plans for the trial, scheduled for July 25, 1916. Captain Lorraine recalls that his crew consisted of Driver Fred Temple; Ray Cross and Joe Lorraine on the rear step to break the coupling and attach the nozzle; Ray Bradshaw to turn on the hydrant, while Captain Lorraine himself made the coupling to the hydrant.

A 6-cylinder White hose and chemical combination was selected to make the run, for it was a very speedy rig. The chassis had been purchased in December, 1913; the body from a horse drawn hose wagon put on it, and it went into service January, 1914. A picture is shown of this rig, taken about 1915, together with a picture of the vehicle as it looks today. It is still with the Colorado Springs Fire Department and will still run, its chief function being to pull the department's old steamer to the schools each year during Fire Prevention Week.

A fire hydrant was selected at the corner of Vermijo and Nevada Avenues, exactly one-quarter of a mile from the front wheels of the White as it stood in the station. Mr. Barley acted as umpire, and went upstairs in the fire station to see that the crew was undressed and in bed. Mr. Townsend had a camera for pictures of the run and he, with Chief McCartin and retired assistant chief B. B. McReynolds, held stop watches.

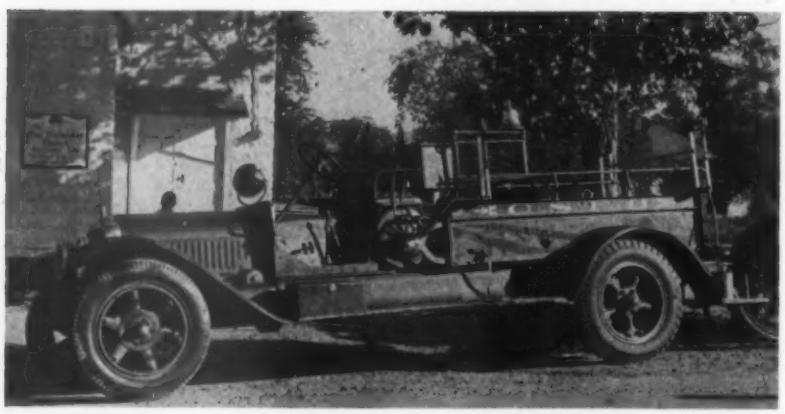
The streets were blocked to eliminate cross traffic and reduce the risk of accident. The White was warmed up. When everything was in readiness, the men were tapped out. At the stroke of the gong they leaped from bed into boots and bunkers, then slid the pole to the apparatus floor. The White was cranked, and the warm engine started quickly; then with the crew in their places, it rolled down the ramp and turned south on Nevada Avenue.

There is no record of the speed attained in the quarter-mile traveled, but even with the rapid acceleration of modern powerful apparatus that first quarter-mile out of the station takes many seconds.

Arrived at the plug, coupling was made and 250 feet of hose laid. When water reached the nozzle the watches were stopped and taken to a jeweler's for reading.

The official time for the run, as recorded in the log of the fire station, was 58 3/5 seconds. A very brief account of this run is to be found in the Colorado Springs Evening Telegraph for July 26, 1916, and it substantiates Captain Lorraine's story in all details. According to the newspaper, both of the engineers declared it was the fastest demonstration they had ever witnessed.

Colorado Springs Fire Department, No. 1 White Hose and Chemical Combination, in service at No. 1 station, probably 1915. Men on apparatus, from left to right, are: Captain C. R. Daily, Driver Charles Van Nattan, Oscar Amsler, John Aubuchon, and Spide Miller. On the ground are Walter Lorraine and Emery Johnson.



In the Colorado Springs Fire Department, this hose and chemical combination is designated as the No. 1 White, simply because it was the first White purchased. The White chassis was purchased December 13, 1913, the body from a horse drawn hose and combination put on, and it was put in service at the central fire station, 19-20 South Nevada Avenue, on January 13, 1914. About 1934, the original 6-cylinder engine was replaced by a 4-cylinder engine. It has not been in service since 1935. This picture was taken October 6, 1953, when it was employed to pull the steamer to each school for a Fire Prevention Week program.

Volunteers Complete Training Courses

Seventy firemen from ten communities in Orange and Sullivan counties, N. Y., have completed the advanced course of the New York State Fire Training Program. Twenty-three from Orange County and forty-seven from Sullivan County will receive certificates as a result of perfect attendance for forty-five hours at fifteen sessions that make up the program. Thirteen firemen and seven officers from the Lumberland Fire Department; twelve firemen and eleven officers of the Port Jervis Fire Department; eight firemen and five officers of the Yulan Fire Department; ten firemen of the Monticello Fire Department; three firemen from the White Lake Fire Department; and one fireman from the Liberty Fire Department were included among the graduates.

All of the eight courses, three basic, three intermediate and two advanced, were taught by Orange County Fire Instructor, Robert R. Wheeler. The combined courses were made possible through the cooperation and with the assistance of Sullivan County Fire Coordinator, Dewey Borden, and Orange County Fire Coordinator, George Brundage. On June 21, 1954, the graduation dinner was held, at which a representative of the Bureau of Fire Mobilization and Control of the State of New York presented the fire training certificates.

"We've cut our hose costs in half

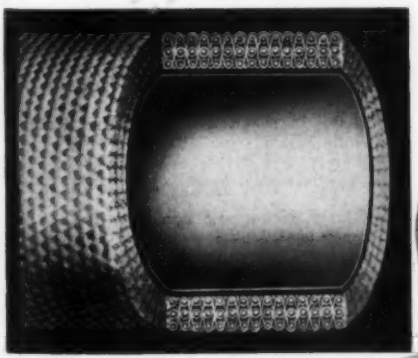
BY STANDARDIZING ON PREMIUM QUALITY

EUREKA Multiple-Woven"

THE "CHIEF" knows that Eureka MULTIPLE-WOVEN actually costs *far less per year* than hose selling at only half its price! This unique, top quality hose not only lasts up to 6 times longer but also provides a much greater degree of safety and dependability throughout its long life.

Eureka MULTIPLE-WOVEN hose is circular-woven on special Eureka looms so that all plies are *interwoven* into a homogeneous jacket. There's no room between plies for water or dirt to collect, as in loose-jacketed hose. Balanced weaving and controlled curing eliminate excessive writhing and warping, making it safer to handle on ladders. Its smooth-interior filler ply reduces hydraulic friction, assures maximum nozzle pressure.

Eureka makes and sells all grades of fire hose. But, for true long-range economy—the economy of quality—we recommend you invest your future hose appropriations in dependable, long lasting Eureka MULTIPLE-WOVEN. There's no other hose like it!



"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

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FALSE ALARMS

Comparison

A flustered young man stood at the lingerie counter buying a brassiere for his wife. A charming clerk was aiding in determining the proper size.

"About the size of a grapefruit?" she said.

"No, smaller."

"Oh, more like oranges?"

"No, still too big!"

"Peach?"

"No."

"Egg?" asked the girl doubtingly.

"Yeah," drawled the man. "Fried."

Two men at a county fair were fascinated by a booth where little celluloid balls bobbed on top of water jets. Customers were offered substantial prizes if they succeeded in shooting any one of the balls off its perch. One of the men spent six quarters in a vain attempt to pick off one ball. Finally his friend pushed him aside and picked up the rifle.

"Watch how I do it," he said

He took a single shot. All six balls disappeared.

As they walked away from the booth laden with prizes, the unsuccessful one marveled. "How did you do it?" he asked.

"It just took knowing how," explained the winner. "I shot the man working the pump."

A Chicago restaurant prominently displays this sign: "What Morsels These Foods Be!" And in Manhattan, another eating establishment frankly states: "It's tough to pay $1.50 for a steak, but it's tougher when you pay only $1.00."

"At times like this, I wish I played the clarinet!"

Novel

The following announcement was received from a member of the Chula Vista, Calif., fire department.

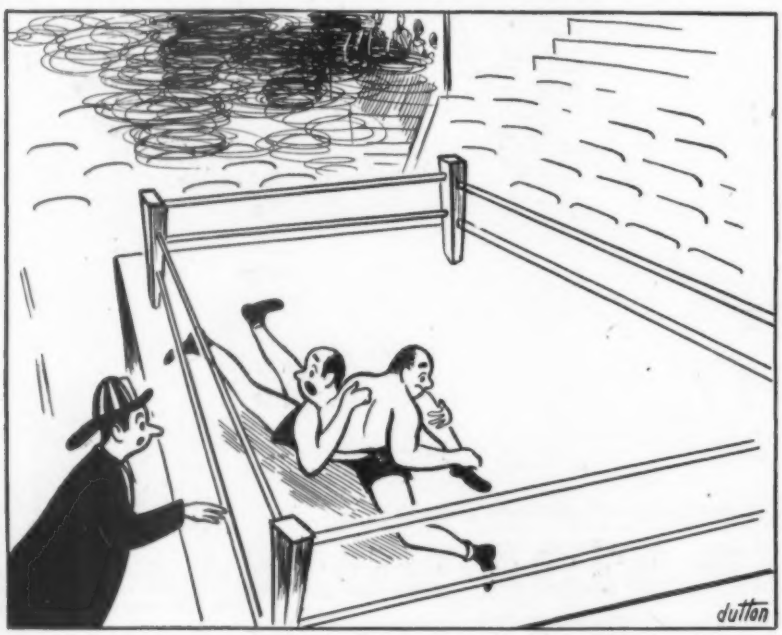
"Received on March 16 at 4:10 P.M. in the Chula Vista Hospital 1 Rig named Ricki Lynn equipped with female couplings:

Chassis weight, stripped, 7 lbs. 8 oz.

Wheel base, 20½ in.

This new Rig is equipped with the latest type siren and has an unlimited water supply, which can be dispelled from any position.

With the addition of this new Rig, many changes will be made. This new Rig is now on display at the home in Chula Vista."



"He still thinks it's just a trick to make him break his hold!"

Verbatim

An African chieftain flew to London for a visit and was met at the airport by newsmen. "Good morning, Chief," one said. "Did you have a comfortable flight?"

The chief made a series of raucous noises — honk, oink, screetch, z-z-z-z, then added in perfect English, "Yes, very pleasant indeed."

"And how long do you plan to stay?" asked the reporter.

Prefacing his remarks with the same noises, the chief answered, "About three weeks, I think."

"Tell me, Chief," inquired the baffled reporter, "where did you learn to speak such flawless English?"

After the now standard honk, oink screetch, whistle and z-z-z-z, the chief said, "Short wave radio."

Lift your glass and make a toast
To lovely, frivolous Fran;
'Cause she's always a believer in
The law of supplyin' de man!

. . . the best way to get ahead is to be like a swimming duck; keep calm and cool on top but paddle like hell underneath.

KNOCKOUT PUNCH for fires!

INTERNATIONAL Model R-306. Engines available from 266 to 318 hp. 5-speed transmission. 1500 gpm. capacity.

It takes toughness, speed, flexibility, and safety to fight fires with expert efficiency. And that's where INTERNATIONAL fire truck chassis excel. They go beyond the stiffest fire department requirement.

INTERNATIONAL Tough Job engineering is part of the story. It has made INTERNATIONAL Trucks the heavy-duty sales leader for 22 straight years. Another reason is *specialized* fire truck chassis design. Extra-high torque in the operating range, for example, means extra power for quick starts, acceleration, and maneuverability. It means dependable power for full-pressure, full-capacity pumping.

Choose from 7 models. Pumping capacities from 300 to 1500 gpm.

Your INTERNATIONAL Dealer or Branch will help you. Ask for full details today.

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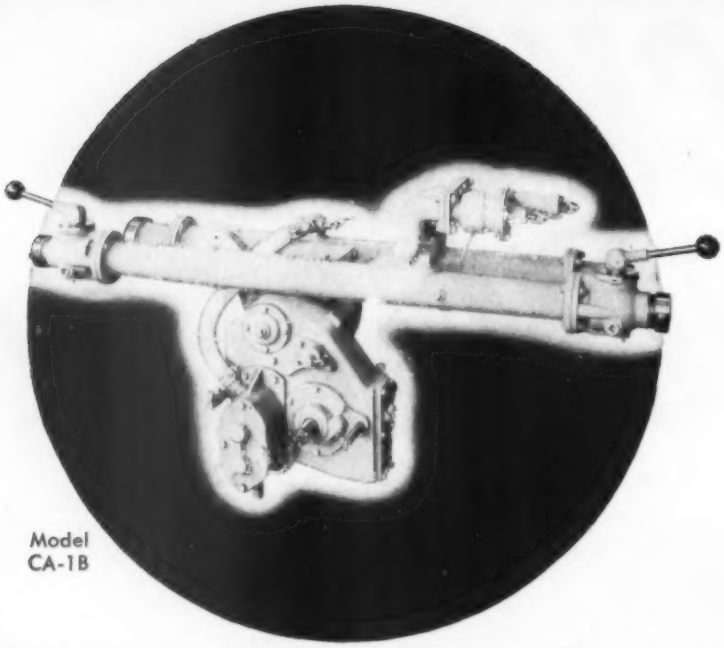
International Harvester Builds **McCormick®** Farm Equipment and **FARMALL®** Tractors...Motor Trucks...Industrial Power...Refrigerators and Freezers

Better roads mean a better America

INTERNATIONAL® TRUCKS

"Standard of the Highway"



Model CA-1B

Waterous offers new single-stage 500 GPM centrifugal fire pump

● Here's the first picture of the new WATEROUS CA-1B fire pump, a single-stage 500 GPM Class A centrifugal.

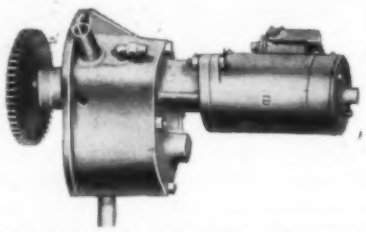
The CA-1B may be equipped with either a gear-driven or electrically driven rotary-primer; it can also be furnished with tachometer drive. Valves, relief valve and other fittings are of standard WATEROUS high quality.

This important new pump also offers an improved, quiet-running transmission in which gear case "drop" has been increased; also an improved drive-line coupling.

Another important feature of the CA-1B is its simple design. The number of joints and connections has been reduced to eliminate many of the points where leakage may occur. The CA-1B is a compact pump which can be mounted low on the chassis.

As in all WATEROUS centrifugal pumps, ball bearings are used for both the impeller shaft and gears. The impeller shaft bearings run in *oil* and are completely protected from water by stuffing box, flinger ring and a special bearing seal.

From suction to discharge, the new CA-1B is built with the same high-quality materials and careful workmanship which have made WATEROUS pumps famous for long life and dependability since 1886. Gears, bearings, and shafts are considerably oversize for a pump with this rated capacity.



WATEROUS Model HGE-281 Electric Primer available with new CA-1B as optional equipment.

For further information regarding the new CA-1B or the complete line of WATEROUS fire pumps (100 to 2000 GPM) write the WATEROUS Company, 40 Fillmore Avenue, St. Paul, Minn.

MEMBER FAM FIRE APPARATUS MANUFACTURERS

Waterous
DEPENDABLE PUMPS
SINCE 1886

With Our Readers

Mounting Warning Lights

To the Editor—

While paging through a recent issue of *Fire Engineering*, I noticed a wide disparity in the location of red warning lights on fire apparatus.

A quick check showed seven mounted on cab roofs; five on left front fenders; two on grille on bumpers (between main headlights); and eight with multiple lights on left front fenders and cab roofs.

In 1951, while Fire Marshal, Army Arctic Training Center, Big Delta, Alaska, I had several complaints by fire truck drivers that vehicles failed to give fire apparatus the right-of-way at night. Our combination siren-red flashing light was mounted on the left front fender of our apparatus. A field test quickly revealed that the trucks' main headlights completely drowned out the red flashing light at about three hundred feet.

We shifted the combination siren-flashing red light to the cab roof and found them visible at 1500 to 2000 feet facing the headlights. Our troubles with the right-of-way at night promptly ceased.

In cities and rural areas the placing of the red flashing light as far away from headlights as possible will materially increase night time visibility and thereby reduce a potential cause of accidents. A high mounting also makes the light visible to a series of on-coming drivers since the following drivers can see it over the roof of preceding drivers. Similarly, drivers proceeding in the same direction as the fire apparatus, can detect the red flasher more easily through their rear-view mirror.

It is suggested that you further investigate this detail in conjunction with some fire apparatus manufacturers to arrive at conclusive information on visibility distance. If you sustain my experience, I suggest you make this the subject of an article to forcefully bring the matter to the attention of all in the fire protection profession. The difference is amazing.

LT. COL. NORMAN R. ARCHER.

British Considering Phone Restriction

Recently *Fire Engineering* published a cartoon from a British paper showing an excited householder trying to get to a public telephone booth to telephone an alarm of fire. His blazing house in the background was ignored by the long "queue" of people lined up, awaiting their turn at the public phone.

That the authorities of the "Tight Little Isle" have their headaches over the inability of citizens to use a telephone when it is needed, no less than we here in this country, is indicated somewhat by an item appearing in the May press. It seems that British legislatures are considering methods to prevent women from talking too much on the telephone.

A Conservative member of Parliament has suggested in Commons that the post office (which runs the phones in Britain) should make "a very heavy charge" when a public booth call runs over 15 minutes. As things are now, a four-cent call allows the caller to talk all day.

BOOKS

Recognized by the Fire Service as Standard

Every Fire Fighter Should Have

FIRE SERVICE RESCUE MANUAL

by JOE MAHAFFEY

Designed to serve as instructional material for firemen, particularly those attached to rescue squads, it is a gold-mine of practical, up-to-date, "how-to-do-it" information covering all phases of fire service activities relating to the saving of human life—first aid, manual and mechanical administration of artificial respiration, transportation of injured, use and care of rescue equipment, and rescue operations in general.

Fire Chiefs who realize the importance of developing their rescue work to top efficiency, as most fire departments are doing these days, would do well to place a copy of this book in the hands of each of their men concerned with this type of work.

62 pages, illustrated **$1.25 Postpaid**

FIRE SERVICE LADDERS

by ROI B. WOOLLEY

This book is without question the most complete, practical and authoritative material ever made available to the fire service on every phase of ladder use, handling and care. It is not only brimful of instructive illustrations but *each operation is fully explained* in easy-to-understand detail. The author is Assistant Editor of FIRE ENGINEERING, a former chief and a nationally recognized authority on fire fighting.

Every fire chief, instructor and training school should have this book, and a copy certainly belongs in each fire station.

108 pages, 319 illustrations **$2.00 Postpaid**

PROMOTIONAL STUDY COURSE FOR FIREMEN

by FRED SHEPPERD

Published in response to numerous requests from fire department officers and men working for advancement, this new book embraces the famous "Promotional Study Course" which ran serially in FIRE ENGINEERING and proved to be so tremendously popular. Covering in chapter lessons most of the important phases of fire protection promotional study —mainly in questions and answers form—all of it is in the concise style generally used and preferred by civil service examiners.

To fire chiefs and other officials responsible for preparing examinations, this book will be found most helpful. And it is a mighty good reason, too, why fire officers and men should find it of inestimable value in studying for advancement.

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by GEO. J. KUSS
Former Deputy Chief,
New York Fire Department
and FRED SHEPPERD

Contains questions asked at promotional examinations in practically every city in the country where civil service examinations are held, with answers.

Includes chapters on Report Writing, How to Answer Examination Questions, Chemistry Examination Questions, Fire-Fighting Questions, Overhauling, Ventilation, Fire Prevention, Inspection, Evolutions, Drills, Use of Apparatus, Rescue Work, and in fact all the topics covered by the fire department promotional examinations.

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FIRE SERVICE HYDRAULICS

by FRED SHEPPERD, *Editorial Director*
of FIRE ENGINEERING

Covers thoroughly and authoritatively the subject of hydraulics as it pertains to every phase of fire-fighting—in simpler, more understandable and more complete form than ever. Not only that, it embraces, as well, many important angles that have never before been covered anywhere. There are several new formulas, originated by Mr. Shepperd, and even old ones have been simplified or revised for greater accuracy.

250 pages, 185 illustrations **$3.00 Postpaid**

THE FIRE CHIEF'S HANDBOOK

by FRED SHEPPERD

There have been books on fire-fighting, but never anything so complete and authoritative as "Fire Chief's Handbook." This book, a gold-mine of practical, helpful data, gives a reliable answer to almost every question that might come up in modern fire-fighting practice.

Used by fire chiefs everywhere as a reference guide, it has become known as the bible of the fire-fighting profession. Ambitious fire department officers and men, too, have found this book extremely helpful in preparing for promotion.

485 pages, profusely illustrated **$4.00 Postpaid**

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"Fire Service Rescue Manual" at $1.25 ☐
"Fire Service Ladders" at $2 ☐
"Promotional Study Course for Firemen" at $3 ☐
"Questions & Answers for Lieut. & Capt." at $2.50 ☐
"Fire Service Hydraulics" at $3 ☐
"Fire Chief's Handbook" at $4 ☐

Check, M.O. or City form enclosed (No C.O.D.'s)

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Bendix

"MULTI-MASTER"

The Mobile Radio With A Thousand Uses!

*Reg. U. S. Pat. Off.

- The Bendix "Multi-Master" can be used as a fixed station.
- It can be used as a mobile unit.
- True adjacent channel operation in 152-174 Mc. band.
- Available in either AC or DC current.
- It is available from 2½ to 35 watt output.
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The Bendix* Multi-Master incorporates all the new and outstanding features of Bendix 2-way radio. It has range and power. Static free reception. Longer life components. Low power drain.

Bendix offers a complete line of accessories from hand sets to speakers, antenna to shock mounts . . . plus all technical help in obtaining license and complete system engineering.

It costs no more to own the best . . . so look at Bendix Radio before you buy. Write today to the address below.

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Canadian Distributor: Aviation Electric, Ltd., 200 Laurentian Blvd., Montreal, Quebec

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Champagne Flows Like (Fire) Water

Fabulously wealthy Texans, Mr. and Mrs. Ray Gilliland, reportedly spent $30,000 the night of June 3rd to give themselves and some 300 invited guests —not to overlook some 200 uninvited others who crashed the gardenia-garlanded entranceway of Hollywood's Mocambo restaurant, a "hot" wedding reception.

The wayward press said the party "was remarkably orderly" the only "mishap" occurred when the cotton tulle dress of actress Marie McDonald caught fire from either a carelessly tossed cigarette, or a candle, or something.

Miss McDonald's husband, Harry Karl, beat out the flames in the flimsy material with his hands. His movie star wife received minor burns to her left leg. She fainted in the excitement, but quickly recovered, and the party went on.

The only thing missing was a company of elite Blazebeaters, properly attired in waterproof tux's and equipped with requisite extinguishers moulded in the form of cornucopias and filled with bubbly water!

* * *

Nipped in the Bud

Asst. Fire Chief Jerome C. Barrett, of the Bridgeport, Conn., Fire Department had both eyes opened recently when he thwarted the efforts of two little boys to sound a false alarm as he saw them operate the lever in Box 551, Stratford and Hollister Avenues.

Chief Barrett and his aide, fire fighter Edward Fitch, were riding in a fire department car. The Chief spotted a 12-year-old boy lifting a five-year-old companion to the fire alarm box. He ordered his driver to stop, then halted the boys. After learning that there was no fire, he radioed Headquarters and notified alarm room dispatchers not to send out apparatus.

"The operators were just about to send out the box when they received my signal from the department car," said Chief Barrett. The Chief quoted the youngsters as saying their parents were not at home and they decided to sound a false alarm. After being questioned by police the pair was released in custody of their parents.

Thanks, TOM MAGNER.

* * *

Cop Aspires to Fight Fires; Perspires; Retires

Ever since he saved a man's life during a fire in 1952, and received a commendation for the deed, Patrolman Thomas McMahon, 27, of the Flushing, L. I., Precinct, has had a yen to be a fireman instead of a cop. And so, finally, he put in for a transfer.

T'other day, McMahon saw smoke pouring from a one-room cabinetmaker's shop in College Point, Queens. The cop-fireman-aspirant ran in, wetted a blanket and threw it over a blazing desk before flames spread to paints and varnishes.

When the professional fire fighters arrived, the fire was out. And so was McMahon! He staggered from the shop and collapsed on the sidewalk.

Recovering from smoke poisoning at Queens General Hospital, somebody asked him if he had a message to send anybody.

"Yeah!" McMahon said, and he wasn't kidding, "Tell them to take my name off that transfer list, I'm going to stay a cop."

Thanks, LARRY FEIHEL.

* * *

Train Crew Vamp Fire Fighters

A routine "train delay" report from Central Vermont R.R. conductor H. A. Muldoon revealed that Muldoon and his engine crew were volunteer fire fighters on their "milk run" train trip from St. Albans, Vt., to White River Junction.

It seems that when their train (No. 210) was highballing down the White River Valley approaching Randolph, the crewmen saw farmers fighting a chimney fire in the "second house south of Whiting's Creamery."

The engineer, S. W. Martin, stopped his train; Muldoon called the Randolph Fire Department, and other crew members grabbed fire extinguishers from the caboose, and went into action.

The fire under control, the crew and train proceeded. Now Conductor Muldoon has asked his railroad for a new extinguisher to replace the one used. And—for an "excuse" for the 15-minute delay caused the train.

Thanks, JONAS WELCOME

* * *

Hot Off the Tape

Police of Sacramento, Calif., won a chase with a hot rod that was really H O T—abetted somewhat by the fire force. Officers in a patrol car were chasing an old model auto. It was getting away from 'em, but then its brakes caught fire. The 17-year-old driver and four other youths were taken into custody—after police called the fire department. . . . Out Marshall, Mo., way a group of rural citizens banded together to form a fire protection association. They bought a fire truck and got ready to cooperate. Then a call came in. But things were delayed 15 minutes to make sure the caller was a member and deserving of the organization's help. So, by the time the pumper finally rushed up to the farm home, the fire was out—some volunteers had beat 'em to it. . . . An explosion, apparently from waste magnesium at the city dump in Cleveland, was seen 12 miles away, the night of May 24. City councilmen interrupted their meeting and Mayor Celebrezze and Safety Director McCormick left to investigate. Only one fire alarm box was pulled, however. . . . In Chicago, Henry Johnson had money to burn May 17th, and he burned it. Johnson, a 29-year-old laborer, told police he set fire to $85 in currency during a quarrel with his wife. The flames spread out of control, resulting in an extra alarm fire that routed 10 persons from the 20-apartment building where the Johnsons live. Firemen estimated damage at $5,000. Now, more'n ever we know that money is the "root of all evil." . . . Vandals hacked out with an axe a 6-foot section of a 500-line cable of the N. J. Bell Telephone Co. June 2, cutting off phone service in an industrial waterfront section of Jersey City and part of Ellis

Island. Fortunately no fire had to be reported during the interval. . . . Oak Brook is a suburb of Chicago. It has a community fire department which wants a new fire station. It also has some "educated horses". Well, the horses will stage a three-day performance under the auspices of the Oak Brook Polo Club, beginning June 11, the proceeds to go to the community fire department. . . . Somebody tried to give John Capelli a hot time May 13. Capelli looked out of the Peacock House, a restaurant he owns on Route 46, Wayne, N. J., and saw his car blazing. He put the fire out. A few minutes later he saw a running figure outside—and discovered three more fires, two in restaurant windows and a third in his car again. "I dunno who did it, or why," he told police.

Buffalo School Fire Survey Bares 454 Hazards

A total of 454 fire hazards were discovered in Buffalo public schools, according to Fire Commissioner Charles W. Halloran, in a statement to Mayor Steven Pankow, following an inspection of 100 school buildings launched after the fatal fire March 31 at the annex of Cleveland Elementary School in Cheektowaga.

The Commissioner said 90 per cent of hazards have already been corrected. The remaining 10 per cent of unsafe conditions are of a structural nature, such as lack of adequate fire walls, open stairways and air ducts ending in attics.

Halloran also reported fire companies reach any public school in the city in a maximum of two minutes after an alarm, and stressed the necessity for quick detection of fires. "I must repeat," he said, "fire must be discovered by someone and the alarm sounded. Undetected fire or delayed alarms are an important factor in all large or tragic fires."

To insure rapid detection and prompt evacuation and the alerting of the fire department, Halloran recommended these measures:

1. A comprehensive uniform fire alarm and detection system to assure an orderly evacuation, and automatic provision to transmit the alarm to the fire department, without human intervention.
2. Elimination of structural hazards.

The Commissioner said the fire detection systems could be of the automatic sprinkler type, automatic fire detection devices or both, but that any systems used should be tied into the fire department alarm system to automatically notify the department.

London's Telephone False Alarms

According to the periodical report of the London (England) Fire brigade committee—October 1, 1953, to the end of March this year—the brigade responded to 8,332 calls as follows:

3rd Quarter		4th Quarter
1,675	Fires	1,805
166	Chimney fires	1,360
882	False alarms	1,190
316	Services not needed	60
509	Special service	369
3,548		4,784

Of the 1,244 maliciously false alarms during the six months, 630 were by telephone (280 and 350); and 614 by fire alarm (303 and 311).

There were 784 false calls "given with good intent" (273 and 511).

—From "Fire," June, 1954

Electric Light and Power for Every Need

ONAN ELECTRIC PLANTS

New Emergency Power Unit

carries 10,000 watts of *fire-fighting light and power*

Built to specifications of the Greensboro, N. C. fire department, this power unit incorporates many new ideas. Both sides of the truck, for instance, hold identical equipment. Located in the many steel compartments are four 500-watt floodlights, five 150-watt hand lights, electric saws, suction fans, electric drills, two 300-foot reels of light cord, an acetylene cutting and welding outfit and dozens of other items. Four more 500-watt floodlights are mounted on top of the truck on standards which can be raised to 4½ feet above the truck roof.

Power for all electrical equipment is supplied by an Onan heavy-duty, 10,000-watt water-cooled electric plant. Its dimensions allow it to be placed across the truck body behind the cab. The plant is started electrically.

Whether your requirement is for a truck-mounted power unit such as this one, or for smaller hand-portable units, Onan has the dependable 4-cycle-engine-powered plants that meet your specifications.

MODEL 10HQ, 10,000 Watts

This is the Onan model used in the Greensboro unit. Powered by a 4-cylinder, heavy-duty gasoline engine. Equipped with all necessary instruments and controls.

WRITE TODAY

Special folder shows scores of Onan models for fire department uses.

Onan ELECTRIC PLANTS

D. W. ONAN & SONS INC.

5725 University Ave. S. E., Minneapolis 14, Minnesota

Ventilation

(*Continued from page 574*)

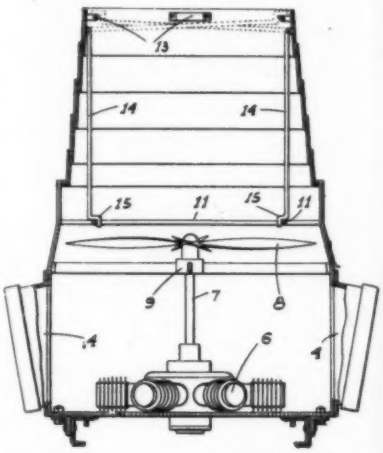
that he was speaking of *smoldering fires*, where the department arrives before it gets hot enough to shatter windows around the basement. A smoke ejector, he believed, is good only at fires in their early stages, i.e., incipient fires.

The captain prophesied (1940) that "soon there will be a small portable smoke exhauster on the market that will excite the Fire Chief, for instead of exhausting about 3500 CFM, it will be able to exhaust from 8,000 to 70,000 CFM, according to the size of the fan. This power plant, he envisaged "could be operated from a power generator of a squad wagon.

An improvised smoke ejector was developed by the Grand Rapids, Mich., Fire Department a few years ago out of a blizzard silo filler. It is driven by a four-cylinder motor, using four "V" belts. The unit was used during the department's struggle to extinguish a serious fire in the Hotel Cody, to clear the smoke-charged cellar.

Lighter, Portable Ejectors

At least a part of the prophesy has come true. There are light, portable, powerful units today, which operate off a standard portable generator, or fixed generator of a squad wagon. These are being used on an ever increasing scale. They can be carried and placed in operation in shafts, tunnels, vaults, etc., where the mounted ejector, or exhauster truck cannot go. And it is being found that, although individually they may not have the higher CFM capacity of the larger, fixed types, when used in combination they not only can develop that desired smoke-removal and air replacement volume but their flexibility and operation in combination produces much better results than where the single, heavier unit is employed.



Cross section of smoke exhauster at Sacramento, showing airplane motor (6) connected to propeller (8).

There are a number of companies presently turning out these handy portable units. One of the originators was the Homelite Corp., Port Chester, N. Y., which was one of the first concerns to manufacture a lightweight portable power generator. It was only natural that the concern would adapt its power plant to the pumping of water, and the operation of fans for air movement.

Development of the Homelite smoke remover started with the New York Fire Department about 1937. The department at that time had some old water-driven smoke ejectors in service about 12 years which they were never able to use widely because to operate them efficiently they had to be hooked to a pumper to develop the required water pressure. Efforts were made to use one of these at the Ritz Tower basement tragedy but without much success. Efforts to operate one of the old smoke ejectors from a Homelite generator were unsuccessful; then the department tried putting a small gasoline engine on it as propelling power. This worked better. Meanwhile, the manufacturer was experimenting with his own devices. The first experiment was conducted in the firehouse basement measuring about 150 feet by 75 feet. A smudge fire was built in a barrel loaded with rubber, tar paper, oily rags, etc. The device quickly and completely removed from the cellar all smoke so that men could enter without the use of masks and walk right up to the test fire.

This and other tests convinced the company there was a need for the lightweight, portable, powerful smoke and air mover and shortly deliveries were made to a number of fire departments, New York City among them. In 1937, New York's Fire Chief John J. McElligott and Acting Battalion Chief Herman Kuch, Superintendent of F. D. Shops, experimented with such a unit, reported

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- PUMP AND EQUIPMENT
- DESIGN AND WORKMANSHIP
- MATERIAL AND FINISH

If your next apparatus is to be a "Commercial"
Write for Details

OREN ROANOKE CORP.
ROANOKE 16, VIRGINIA

to move 4,000 CFM. The department at that time was also experimenting with a larger mobile exhauster built at the department shops, an improvement over the original water-operated ejector, donated to the department 12 years previously by the late Dr. E. G. Stillman.

Since that time Homelite Corporation produced ejectors having capacities of from 4,600 CFM (with 60 ft. duct) to over 5,000 CFM. The engine used is a single cylinder one, it has oil-mixed-with-gasoline lubrication, automatic governor, with fuel consumption of 1¾ hrs. per gallon. It weighs 130 lbs. and measures 25-in. by 24½-in. (height) by 24¼-in. The neophrene covered fire-resistive duct (16-in., collapsible) may be used either on suction or discharge opening. Canvas duct may be used for blowing fresh air.

Another concern that manufactures a portable "ventilator" is The Herman Nelson Corp., Moline, Ill. Its lightweight, high-powered portable fan may be moved from place to place on its own small wheels. It has two-way air flow; duct of 14 in. by 16 ft. made of collapsible canvas, which can be operated simultaneously from inlet and discharge side of fan. This company, like Homelite, is continually increasing the power output, and the CFM capacities of its products.

Chapter IX will be continued in the August issue.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of June, 1954.

Month Ending June 30, 1954

Winslow, Ariz.—Olds Brothers Lumber Co., a combination lumber, hardware and appliance store, destroyed.
North Little Rock, Ark.—Ft. Roots Veterans Hospital destroyed.
Cottonwood, Cal.—H. & B. Sawmill destroyed. Overheated motor.
Igo, Cal.—Igo sawmill, a mile east, destroyed. Sparks from a refuse burner.
Lancaster, Cal.—Bonafoux Milling Co. plant destroyed. Sparks from automobile backfire ignited loose alfalfa.
Loomis, Cal.—Nash De Camp warehouse and food packing plant destroyed.
Pomona, Cal.—Chemical factory of Charles E. Duggan Co. destroyed.
Reseda, Cal.—Unit of Reseda Junior High School under construction, destroyed.
San Francisco, Cal.—Doidge-Koren Paint Co. damaged.
San Jose, Cal.—Herschel California Fruit Products Co. warehouse destroyed.
San Pedro, Cal.—Tidewater Associated Oil Co. marine terminal tank farm in Los Angeles Harbor, damaged. Explosion.
Leadville, Colo.—Methodist Church destroyed.
Pueblo, Colo.—Farmer's Lumber & Supply Co. and National Broom Co. warehouse destroyed.
South Denver, Colo.—Carlon Products Co., makers of plastic piping, destroyed.
Milford, Conn.—Farm buildings on old Nagerski estate destroyed.
Winter Haven, Fla.—Exhibition hall of Florida Citrus Exposition and 36,000 cases of citrus juices stored by Snively Groves, Inc., together with all the scenery of Tom Moore network radio show, destroyed.
Ellaville, Ga.—Lumber yard at Schley County Lumber Co. destroyed. Sparks from a shave pit.
Bonners Ferry, Ida.—Thompson Lumber Co. destroyed.
Idaho Falls, Ida.—Idaho Falls Bonded Warehouse Co. destroyed. Explosion.
Chicago, Ill.—Armour & Co., animal food plant in Chicago's vast stockyards, damaged.
Chicago, Ill.—Abandoned Norris Grain Co. elevator on east bank of Calumet River, damaged.

Ahoy for INDIAN FIRE PUMPS

Get Them Aboard Your Fire Trucks Now!

Many INDIANS over 20 years old are still in service.

Ward LaFrance, Elmira, N. Y. Fire Truck delivered to Port Chester, N. Y., equipped with several brass INDIAN FIRE PUMPS.

"Recommends INDIANS to Any Fire Department"

"We have 5 INDIAN FIRE PUMPS in our station. Since we are having an awful lot of grass fires, I placed some of the INDIANS on our truck and also one in my car.

We have never had a grass fire get away from us since we started using INDIAN FIRE PUMPS and I can truthfully recommend them very highly to any Fire Department."

F. E. Chamberlain, Chief
Chillicothe, Mo. Fire Dept.

All seams electric welded. No leakage.

"Choice for Quality the World Over"

D. B. SMITH & CO. 406 MAIN ST. UTICA 2, N.Y.

PACIFIC COAST BRANCHES:
Hercules Equipment & Rubber Company, Inc. 435 Brannan Street San Francisco 7, California
Fred E. Barnett Company 2005 S. E. 8th Ave. Portland, Oregon
Mill & Mine Supply, Inc 2700 Fourth Avenue South Seattle, Washington
Fleck Bros. Limited 110 Alexander Street Vancouver, B. C., Canada
Halprin Supply Co. 1355 So. Flower Street Los Angeles 15, Calif.
Fred E. Barnett Company 600 Spring Street Klamath Falls, Oregon
L. M. Curtis & Sons 426 West Third Street South Salt Lake City, Utah
C. E. Hickey & Sons, Ltd. Hamilton, Canada

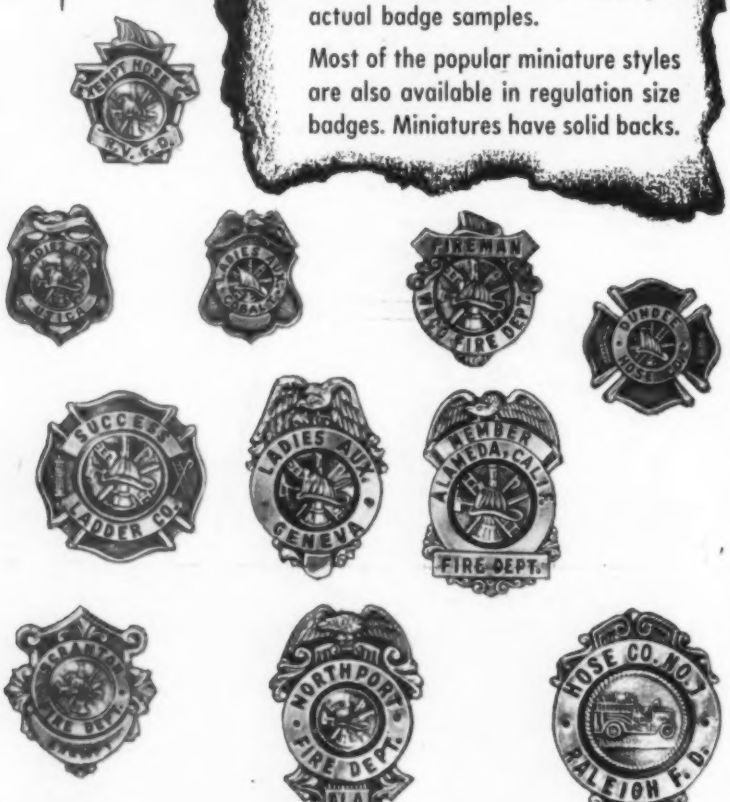
CANADIAN AGENTS:

You should own a handsome MINIATURE Fire Fighter's Badge

Whether you are a "Regular" or a "Volunteer" a miniature badge is a must for off-duty recognition. Carry your miniature with pride, it's a small token of your contribution to your community.

Contact your Blackinton Badge Dealer today and ask him to show you actual badge samples.

Most of the popular miniature styles are also available in regulation size badges. Miniatures have solid backs.


SUCCESS LADDER CO.
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MEMBER ALAMEDA, CALIF. FIRE DEPT.
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NORTHPORT FIRE DEPT. ALA.
HOSE CO. NO. 1 RALEIGH F. D.

Blackinton has the largest selection of miniature badges in the country

BLACKINTON
V. H. BLACKINTON & CO., INC.
ATTLEBORO FALLS, MASS.

Jacksonville, Ill. — Crawford planing mill destroyed.
Kankakee, Ill.—Kankakee Ice, Feed and Fuel Co. destroyed.
Springfield, Ill.—Tipple and engine room of Old West Mine, destroyed.
Indianapolis, Ind.—Keys Restaurant damaged.
Madison, Ind.—Fred Kolb building occupied by Ted Bear appliance store, shoe repair shop and Kolb tire service, damaged. Cigarette lighter.
Vincennes, Ind.—Salter-Morgan Hardware Co. destroyed.
Alta, Ia.—Farmers Elevator Co. plant destroyed.
Fort Dodge, Ia.—Lilyan's women's ready-to-wear store damaged. Defective air conditioning system.
River Sioux, Ia. — The Farmers Elevator destroyed.
Ruthven, Ia.—Farmers Co-operative Elevator destroyed.
East Bridgewater, Mass.—St. John's Catholic Church destroyed.
Birmingham, Mich.—Dwelling of Maureen Couper, in this fashionable Detroit suburb.
Flint, Mich.—Flint Scrap Iron & Metal Co. building damaged.
Grand Rapids, Mich.—Building occupied by Associated East Recreation Bowling Alleys, Peck's Drug Store, Clement's Young Ages Store, Blue Ribbon Cleaners, Sinfonia Record Shop, Laskey Photographers and 24 offices damaged.
Grand Rapids, Mich.—Waltile Co. building destroyed.
Jackson, Mich.—White Laundry destroyed.
Hopkins, Minn.—Ryan Industries Inc. plant destroyed.
Batesville, Miss.—C. H. Flint & Son hardware store and four other buildings, destroyed.
Des Loge, Mo.—Pen Dandy Baking Co. plant destroyed.
Kansas City, Mo.—Building occupied by Universal Manufacturing Co., Central Printing Co., Alex Catalano, Inc., and Kansas City Composition, Inc., damaged. Arson.
South St. Louis, Mo. — Wilson-Keith & Co., pharmaceutical plant, destroyed. Explosion.
Libby, Mont. — Libby Motors machinery destroyed. Explosion.
Missoula, Mont.—Montana Hardboard Co. plant damaged.
Plaistow, N. H.—Factory at Russell Heel Co. damaged.
Edgewater, N. J.—Two warehouses, River Road on Hudson River, one formerly used for storage by National Sugar Co. and another used by Ford Motor Co. for storage of new autos awaiting shipment overseas, destroyed.
Elizabeth, N. J.—Elizabeth, Inc., a shoe store, upper floors occupied as offices, damaged.
Jersey City, N. J.—Warehouse of Gratale Bros destroyed.
Jersey City, N. J.—Warehouse of Colgate-Palmolive-Peet Co. damaged.
Astoria, N. Y.—Harrison Drug store destroyed. Adiacent seevn stores damaged.
Brookhaven, N. Y.—Feed mill on Robinson Duck Farm destroyed. Overheated elevator bearing.
Lockport, N. Y.—Main plant and warehouse of Western New York Container Corp., paper box making concern, destroyed.
McConnellsville, N. Y.—Plant of Frank S. Harden Furniture Co. damaged.
New York, N. Y.—D. L. Brass Turning Works, manufacturers of automatic machine screw products; Novelty Can Co., manufacturers of metal specialities; Metalworld Forming Co., manufacturers of mannequins; Max Rubin & Co., manufacturers of novelties; Fire Stone Slipper Co., manufacturers of leather and felt slippers and beach sandals and Flex Mills Mfg. Co., manufacturers of elastic bands, heavily damaged.
New York, N. Y.—New York Lumber & Panel Co. damaged.
Oneonta, N. Y.—Butts block occupied by Berns Furniture Store, New York State Employment Office, Markson Furniture Co. and four apartments, destroyed.
Rochester, N. Y.—Storage sheds of Reed Glass Co. destroyed.
Swan Lake, N. Y.—The 50-room hotel, Vacationland, destroyed.
Charlotte, N. C.—New Southern Railway freight station at College and Brevard streets, damaged.
Elizabeth City, N. C.—Lumber mill owned by Frank Horner destroyed.
Maxton, N. C.—Cotton gin owned by Maxton Suply Co. destroyed.
Murphy, N. C.—Hackney-Carolina Co., a wholesale firm and adjoining warehouse building, damaged.
New Bern, N. C.—Waterfront warehouse occupied by Montgomery Ward & Co. and Baugh Fertilizer Co., destroyed.
Bismarck, N. D.—Grand Pacific Hotel in downtown, destroyed.
Centerville, Ohio — Dwelling owned by Walter Strange, destroyed.
Cleveland, Ohio—Warehouse and garage owned by Pennsylvania Railroad and occupied by Tip-Top Distributing Co., destroyed.

Cleveland, Ohio — Bulkley Building, Playhouse Square, occupied by Kitt women's wear store and others, damaged. Electrical fire in utilities tunnel under building.
Niles, Ohio — Mallory-Sharon Titanium Corp. plant damaged.
Springfield, Ohio—Office and garage of Thomas Kappel, Inc., motor freight firm, destroyed.
Oklahoma City, Okla.—Oklahoma City University buildings in heart of the school campus, destroyed.
Albany, Ore.—Forty-unit Elsworth Apartments damaged. Spark from electric mixer.
Coos Bay, Ore.—Geghart Building, containing doctors' offices and paint store, destroyed.
Forest Grove, Ore.—Gales Peak Lumber Co. destroyed.
Portland, Ore.—Portland Electric and Plumbing Supplies destroyed.
Salem, Ore.—Woodry Furniture Co. warehouse destroyed.
Tillamook, Ore.—Town Club destroyed.
Philadelphia, Pa.—Food market, 33rd street and Powelton avenue, damaged.
Philadelphia, Pa.—Firestone Tire and Rubber Co. garage damaged. Explosions.
Trevose, Pa. — Bucks County Grocery Outlet and Butch's Bucks County Auction, damaged.
Whitford, Pa.—Factory building, Lincoln Highway, owned by William Ball, Jr., destroyed.
Union, S. C.—Brooks building housing lodge hall, Uneeda Cafe, Fincher's Dress Shop, Royal Cleaners, J. B. Wood barber shop and offices, damaged.
Amherst, S. D. — Three elevator buildings of Farmers Cooperative Grain Co. and Moeckley Brothers, destroyed.
Cookeville, Tenn.—The Royal Tire Service Co. plant destroyed.
Carrollton, Tex.—Perry's Supermarket destroyed.
Fort Worth, Tex.—Broiler Cafe destroyed.
Houston, Tex.—Shelling mill of Hou-Tex Peanut Co. destroyed.
Port Arthur, Tex.—Griffin Lumber Co. plant destroyed. Burning trash.
Harrisonburg, Va. — City's electric substation damaged.
Seattle, Wash.—Goodwill Industries main building destroyed.
Spokane, Wash.—Cartens Packing Co. plant barns destroyed.
Spokane, Wash. — Gonzaga University Canteen destroyed.
Walla Walla, Wash. — Smile Farm Machine Shop destroyed.
Westport, Wash.—Two buildings of Acosta Grade School destroyed.
Yakima, Wash.—Gleed Cold Storage and Packing Co. destroyed.
Montgomery, W. Va.—The Smokehouse Billiards, Pine Room restaurant and Bon Ton Grill destroyed.
Welch, W. Va.—Tug River Lumber Co. plant damaged.
Foleyet, Ont.—Eleven warehouses, storage sheds and garages, damaged.
Montreal, Que.—J. A. Thibault Ltd., ice manufacturing plant, destroyed.

May Fire Losses

Estimated fire losses in the United States during May amounted to $62,282,000, it was reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $62,282,000 loss represents a decrease of 3.0 per cent over losses of $64,239,000 reported for May, 1953, and a decrease of 20.1 per cent from losses of $77,933,000 for April, 1954.

Losses for the first five months of 1954 now total $390,457,000 an increase of 7.1 per cent over the first five months of 1953, when they amounted to $364,437,000.

These estimated insured losses include an allowance for uninsured and unreported losses.

Insurance in G-M Fire

Reports from the British Insurance Association, London, state that insurance companies paid out $30 million—the largest single property claim in history—as a result of the fire that destroyed the General Motors plant at Livonia, Mich. Aug. 12, 1953.

American and British firms reportedly split the payment covering the complete loss of the thirty-four-acre plant.

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COMCO'S New

FLEETCOM 6/12 Volt 2-Way Radio

MODEL 400 - 6/12
MOBILE PACKAGE

$460

F.O.B. Coral Gables, plus State and Federal taxes. Price subject to change.

25- 50 MC - 25 WATTS OUTPUT } 8/4 Amps.
152-174 MC - 15 WATTS OUTPUT } Standby (6/12)

★ Change from 6 to 12 volts by merely reversing voltage selector plug.

★ Rugged construction with heavy duty power relay and fuse for engine compartment mounting.

★ Dual frequency provisions built in every unit.

★ Readily obtainable 6 volt tubes and vibrator used. 6146 Final amplifier.

★ Can be mounted under dash or almost anywhere. Case 11"x12½"x5½".

★ Low cost maintenance with COMCO color code tuning.

★ Standard manufacturers parts extensively used and identified for easy replacement at your local supplier.

★ Plus many other outstanding features described in bulletin 454 available upon request.

NOTE: Over 150 different COMCO VHF-FM models now certified with U.S. Federal Civil Defense Administration.

ATTENTION DEALERS!
Liberal discounts. Write for available territories.

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Among the Buffs

By Paul C. Ditzel

ONE thing's for sure—there's always room for new ideas in the fire service. Take the new No. 2 Fire Station of the Santa Monica Fire Department, where I spoke one recent night to the monthly meeting of the Harbor District Firemen's Association. Aside from the architectural grace of the new station, I was impressed with the special system of chimes used to announce the receipt of alarms. Some difference between them and the booming of Chinese-sized gongs in other departments.

Funny thing happened, incidentally, during the harbor district meeting. There was a drawing for several prizes of distinct interest to firemen, including a gigantic scale-model Smith-Miller aerial ladder.

Captain William C. McDade told me the guest speaker customarily draws the winning numbers. The first prize, of course, was the fire truck. Now I don't know whether I'll ever be invited back there. You see, I drew my own number! Something tells this skeptical-minded newspaperman that this must have been rigged. But how? P.S.: I'd never won anything in my life.

About the same time as the Santa Monica meeting, Inspector Bob Patterson of the Los Angeles Fire Department interviewed your columnist for a series of radio broadcasts, one of which followed the Indianapolis Memorial Day Race.

The mails this month brought a package from Joseph L. Hallett, Box 358, Norwell, Mass. Brother Hallett is justly proud of his new book, "The Visiting Fireman," which was previewed in this column recently. The book contains material of interest to buffs, plus a roster of firefans.

Captain Jack Henry, 2311 Tamarack Way, Sacramento 21, Calif., says his hobby is collecting fire department souvenirs from all over the world. He'd like to hear from persons who could help build his collection. "My main interest is helmets, badges, cap badges and uniform markings of any sort," writes the fire captain.

And, from Grand Rapids, Mich., comes a newspaper clipping and photograph telling of the activities of the 321 Association of that city. The group is composed of former members of the World War II auxiliary firemen's organization who decided to continue their interest in the fire service. Nine chiefs from the Grand Rapids department were guests of the association. Thanks to Secretary Neil Nederveld for this material.

A couple of letters were received from firefans who hope to start buff clubs and are looking for helpful hints.

Philip L. Johnson, Jr., 5141 N. Park Ave., Indianapolis, said he'd like to hear from club secretaries or members of formal organizations. "We will have the unofficial blessing of the Indianapolis Fire Department, the Indiana Fire Marshal's office and some other governmental groups," Phil writes.

From the country south of us—namely Texas—Mel Pittman, safety engineer for the Columbia-Southern Chemical Corp., P.O. Box 4026, Corpus Christi, reports several men there are interested in setting up a fire buff's organization.

"Can anyone give us details on the organization and functions of some of these Box Clubs or put us in touch with those who can?" he asks.

Seldom does a columnist ever receive plaudits for lending a helping hand. Comes a letter from Jim McCall, 4713 N. Paulina St., Chicago 40, Ill., however, who thanks this column for a recent writeup. (Glad to be able to help, Jim.)

"I have received numerous answers from all over the United States and now I am either trading with them or selling them pictures," says Jim's note of thanks. "Things haven't been too bad lately in the way of fires. In the past two weeks I've been able to take in a 4-11 and a 2-11. The 4-11 was in a freight terminal and the 2-11 in a store-apartment building."

Latest list of officers in Los Angeles' Box 15 Club include: Glen Alton, 2441 W. Orange Dr., Whittier, president; Fred Allen, vice president; and Clarence Ramsey, secretary. And, in passing, mention might be made of the fine newsletter put out by the club's co-editors, Bob Olson and Dale Magee.

Their newspaper also contains notice that another firefan club has been started in Chicago. The membership has already hit 45 and headquarters of The 5-11 Club are at 1407 N. Latrobe Ave., Chicago 51. Honorary President is Ray C. Gerber and Ralph O. G. Fisher is vice president.

Another top notch buff's newsletter is sent along by Secretary James Gray of the Nashville, Tenn., Fire Buffs Club. The paper mentions that the club's en-

BAR-WAY COUPLINGS...

For booster and high pressure fog lines

There are four good reasons why the fire fighters specify BAR-WAY couplings. Four reasons why BAR-WAY couplings are growing in favour with firemen, hydraulic engineers and others who insist on the best.

- **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
- **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
- **FLEXIBILITY**—Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
- **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

Send for our free pamphlet. Gives detailed specifications for all types of pressure hose, ID and OD.

BAR-WAY MFG. CO., STAMFORD, CONN.

WEST COAST REPRESENTATIVE | W. D. RIGBOM, 383 Bronson Street, San Francisco 7, Calif.

gine will respond to all multiple alarm fires.

That's it for this month. Keep the anecdotes flowing to me at 419 Napoleon St., Playa del Rey, Calif. Thanks for your flattering comments about this column and also the articles you've seen under my byline in several national magazines. My next is scheduled for Bluebook Magazine—an article on buffs in which many of you will be mentioned by name.

Wisconsin and Illinois Firemen Meet

On Sunday, May 16th the 36th Annual convention of the Southern Wisconsin and Northern Illinois Firemen's Association was held at Cassville, Wis., with 367 firemen from 51 departments registered.

Topics discussed were "Radio Communications" by T. W. Kennedy, Dist. Rep., Mobile Communication Service, R.C.A.; "Taking the Fog Out of Fog Fire Fighting" by Keith Royer, Chief Instructor, Iowa State Firemanship Training Staff; "Hazards of Plane Rescue," by Chief Jennings, Truax Field, Madison, Wis., and "Safe Handling of Gases" by Captain A. Smikla, La Crosse Fire Dept.

Don Bunnell and Norton Ames were re-elected secretary and president respectively. The May, 1955, convention will be held at Mt. Horeb.

Obituaries

Retired Chief Brelsford Dead

I W. (Bill) Brelsford, 73, for 38 years chief of the Germantown, Ohio, Fire Department, died May 24th, last. He resigned from the department last September, after 42 years service with the organization.

He was the town's third fire chief and is succeeded by Roy Rowe. Memorial services were held by the Germantown Fire Department, with Fire Chief Forrest B. Lucas, of Dayton, officiating.

Deputy Chief F. M. Emden Dead

Utica, N. Y., lost an outstanding fire executive and the state a zealous worker in the cause of fire service legislation, in the death on May 22, 1954, of Deputy Chief Frank M. Emden of the Fire Bureau. He was 63 and one of the state's best known fire fighters, through his association with the state firemen's organization as secretary-treasurer and legal adviser. His most recent assignment in legislative contacts was as a member of the legislative committee of the New York State Association of Fire Chiefs, which recognized his passing at its annual conference in New York, Sunday, June 6th.

He was appointed to the fire department in 1915 and early took interest in working for firemen as public employes. He became an officer of Local 32 of Utica firemen and in 1920, when the N. Y. State Permanent Firemen's Association was formed, he became its secretary-treasurer, which post he held for over 20 years.

He was promoted to lieutenant in 1932, to captain in 1935 and advanced to deputy chief Dec. 1, 1943.

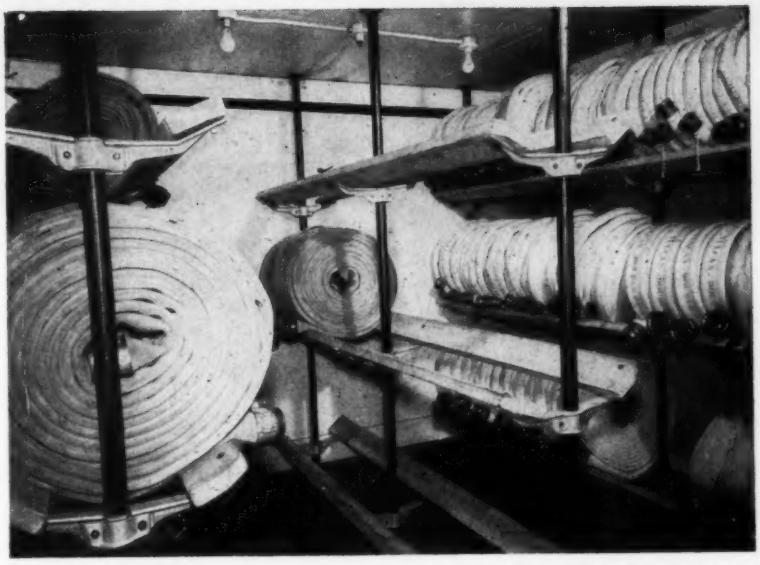
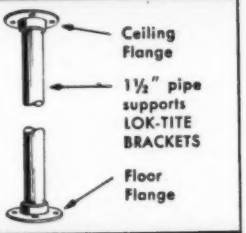


Photo Courtesy Wichita Fire Station No. 1

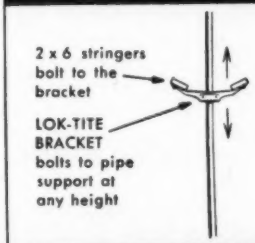
The Solution to Hose Storage Problems

FEATURES

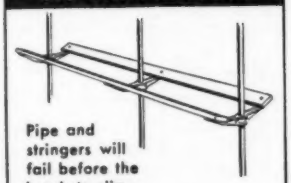
SIMPLE INSTALLATION



EASY ADJUSTMENT



BIG LOAD SUPPORT



Build Your Own Racks With Lok-Tite Brackets

MIGHTY few station houses have all the room they need for good housekeeping. Lok-Tite brackets help solve the hose storage problem by allowing ample ventilation and access in limited storage space.

Build your own racks with new or used materials. Design your own storage to take full advantage of the space available. Have ample room for fittings inspection and ventilation.

Lok-Tite brackets, light weight aluminum alloy, designed for strength and easy installation.

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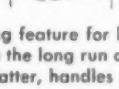
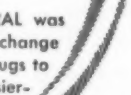
There's no such thing as "almost safe"— to be SURE... Bi-Lateral!

To be safe at *all*, safety must be absolute! Cheap hose is expensive in the long run—in lives as well as money! Bi-Lateral doesn't compete to see how *cheaply* hose can be made, but how to give the city or village the *most* for its money in *safety* and *long-run economy*!

BI-LATERAL was *first* to construct hose with the bi-lateral non-creasing feature for longer life, lower cost in the long run and true safety. Folds flatter, handles more easily!



BI-LATERAL was *first* to change the pin-lugs to rocker lugs for safer, easier-handling couplings, lower-cost hose coupling maintenance.

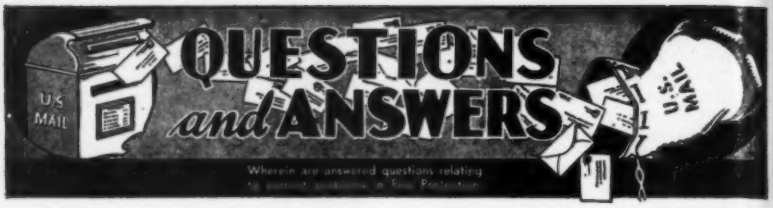


BI-LATERAL was *first* to offer a real detergent, BI-KLEEN — made especially for fire-hose cleaning exclusively for Bi-Lateral by the Essentials Chemical Co. Oil and dirt rot hose—*Bi-Kleen* is *safe, non-toxic,* keeps hose "inspection-white," keeps it cleaner, safer . . . good for fire-house and apparatus, too!

AND BI-LATERAL was *first* to furnish free fire hose record cards to fire departments. They are *still* available — send for a supply!

"When you buy with your conscience, with safety and economy in mind, you'll BI-LATERAL!"

Bi-Lateral
FIRE HOSE CO.
20 N. WACKER DRIVE
CHICAGO 6, ILLINOIS



Wherein are answered questions relating to current conditions in Fire Protection

Some "Short Answer" Questions

To the Editor:

I would appreciate your answering the following "true and false" and "multiple choice" questions for me:

1. When a rotary gear pump is performing a dry test, the churn valve should be closed. True or false?

2. When an officer is teaching a group of men of his company, his best method would be:
   (a) Discuss, demonstrate, ask questions and practice.
   (b) Demonstrate, illustrate, practice and review.
   (c) Ask questions, lecture, demonstrate and practice.
   (d) Practice, ask questions, demonstrate and discuss.

3. The greatest drawback when fighting fires in tall buildings is:
   (a) More pressure is needed.
   (b) Difficulty in reaching upper floors.
   (c) Long vertical shafts such as elevator and dumbwaiter to aid the spread of fire.
   (d) More people need to be rescued.

4. When using carbon dioxide extinguishers, the operator should advance forward, then direct the extinguisher nozzle upward aiming at the edges and base of the fire. True or false?

5. Household cleaning liquids are not usually flammable. True or false?

6. When testing the priming pump of a centrifugal pump, connect the hard suction hose to the pump and cap the other end. True or false?

7. Alcohol is soluble in water. True or false?

8. If there is no clamp available to shut off the hose line to change a nozzle, it is necessary to shut off water at the pump. True or false?

9. Ladder manufacturers are reluctant to reveal information about their ladders. True or false?

10. Once an officer issues an order, he is not responsible for the way it is carried out. True or false?

11. A fire wall is no longer considered a fire wall if there is an opening in it. True or false?

12. Bicarbonate of soda and starch are compounds used in dry powder extinguishers. True or false?

13. Arsonists are different than other types of criminals as they do not return to the scene. True or false?

14. When working from draft and the vertical lift is increased, the capacity of the pump is decreased. True or false?

15. Apparatus that is designed for use in cities are the same as those which can be used in rural areas. True or false?

16. Of the following buildings which are on fire, the one needing complete ventilation the most would be:
   (a) A spray booth in a two-story building.
   (b) A basement fire in a department store.
   (c) A chemistry laboratory in a two-story building.
   (d) A fire on the main floor of a supermarket.

17. Suction lifts in excess of 20 feet are usually hard to maintain. True or false?

18. When inspecting a small jewelry store, always insist upon being accompanied by a guide. True or false?

19. When a fireman is tardy quite often, you as captain should:
   (a) Reprimand him at roll call in front of all members of the company.
   (b) Reprimand him in private.
   (c) Prefer charges against him.
   (d) Do none of these because he will see his mistake and improve.

W. H. E.

Answer: The questions will be answered in the order in which you have given them.

1. True, if by "dry test" you mean suction test.
2. (a).
3. (b).
4. True.
5. Both flammable and non-flammable cleaning fluids are produced for home use. If a local ordinance is in force barring the sale locally, of flammable cleaning fluids, then the question might be answered "true."
6. False.
7. True.
8. True. (If "kinking" of hose is not a practice of the local department.)
9. What information? If it is information on the operation and uses of aerial ladders, the question would be answered "false." If the information is relative to design or experimental data, manufacturers might refuse requests therefor, largely because of the work entailed in making such information available to laymen.

10. False.
11. If the opening is properly protected by approved fire door, this answer would be "false."
12. False. Starch is not an ingredient of dry chemical used in extinguishers.
13. False.
14. By increasing the suction lift, the load on the pumper is increased, and therefore the power available for discharge of water is decreased. If this is the idea the examiner had in mind, then the answer should be "true."
15. Apparatus designed for city use can also be used in rural areas, but such apparatus is not as effective as units especially designed for the latter service. Frequently no water supply is available for fire fighting at farms, and the department must depend upon the water it carries with it. City apparatus is not designed to carry sufficient water for the average rural fire. We believe this question should be answered "false."
16. (b)
17. Pumping engines in good condition should be able to lift water 25 feet and maintain a negative head of that amount. Thus the statement "in excess of 20 feet" would be considered "false."
18. True
19. (b).

Safety at Metal Ladders

To the Editor:

Are metal ladders as safe as wood ladders? We know that metal ladders are as strong and much lighter, but in all-round fire use, where they may come in contact with electric wires, are they as safe as wood ladders?

H. V.

Answer: It is our opinion that metal ladders are as safe as wooden ladders from the electrical conductivity standpoint, and safer from the standpoint of stability and strength.

Wooden ladders carry a steel cable on the underside for extending the ladders. This steel cable will conduct electricity just as readily as the metal beams of a metal ladder down to the body of the truck.

The fact that we have no record of electrical injury to persons using metal aerial ladders would seem to prove this statement.

Performance of Pump

To the Editor:

With reference to Example 195, on Page 204 of "Fire Service Hydraulics," how can an 800-gallon pumper pump seven streams, ⅞-inch tip, with a 1,000-foot line? Combined tip discharge exceeds the 800 gallon capacity of the pump, plus friction loss on side.

A 750-gallon pumper, 120 pounds capacity, is pumping through two separate lines of 2½-inch hose, 700 feet long. What is the friction loss and can the rotary gear pump supply 50 pounds at the 1-inch tip?

Two lines, any length, no set size tip are placed in operation on a fire. The pressure on the pressure gauge

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reads 120 pounds. The pump is pumping at capacity. One of the lines is shut down, and the pressure rises. If both are shut down simultaneously, the pressure reading on the pressure gauge rises to 300 pounds (centrifugal pump). Actually, was the pump producing 300 pounds, realizing only a net of 120, or why did the pressure rise to such a height if the pump couldn't add the added pressure (assume 100 pounds from the hydrant)?

P. C. B.

Answer: The method used in "Fire Service Hydraulics" of finding the discharge of a pump at other than rated pressure is, as stated in the chapter, "for rough calculations." Theoretically a pumping engine should be able to produce the same water horsepower at any pressure. Actually, this is not so, for the greater the pressure becomes, the greater will the friction resistance and slippage be. Then, too, the performance of the unit, based upon pump performance curve, might not conform to the figures secured by the formula employed for finding discharge at other than rated pressures.

Answering your second question, where a pump is delivering water through parallel lines of equal diameter and length, and each equipped with the same size nozzle, and at the same nozzle pressure, the friction loss in each line is identical. Thus if a single line were being used and the friction loss were 40 pounds, and a second line of the same diameter and length were laid, with the same size nozzle, the friction loss in the second would be also 40 pounds.

In the problem you give, the discharge from each nozzle would be 209 gallons per minute, and the discharge from the two nozzles would be 418 gallons. The friction loss in each line would be 70 pounds. The friction losses in the two separate lines are not added together, but the loss in one is identical with the loss in the other.

From friction loss tables we find that the engine pressure would have to be 128 pounds to maintain 50 pounds at the tip.

If we adhere rigidly to specifications, we would say that the engine would not be able to discharge the 418 gallons per minute, for it would require an engine pressure of 128 pounds and we would have to shift the pumper into "pressure" which would mean that we would get but half the discharge at this pressure, namely, 300 gallons per minute.

It is very likely, however, that the engine could in practical operation give 418 gallons per minute at 128 pounds engine pressure, in view of the fact that you have some help from the hydrant. Although the rotary pump will not utilize all the pressure given to it, it is helped some by the hydrant pressure.

Answering your third question, if the two nozzles are shut down, the pump pressure will increase. But it would not rise to 300 pounds unless pressure regulator were set at or above this figure. When no water is being delivered, practically no work is being done by the pumper. The only power being expended is that required to turn over the pump impellers and the trapped water.

Centrifugal pumps are usually equipped with governors, which prevent build-up of excessive speed, and therefore pressure when streams are shut down.

"Fire Chief"

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FIRE-FIGHTING

BROOM

PATENT PENDING

FIBRES COLORED FIRE DEP'T RED

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- FIRE DEPTS.
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SPECIFICATIONS

60" overall length (assembled).

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Strong hickory handles.

Chemically flame-proofed.

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Fibres extend 14" beyond metal.

Red fibres for instant identification.

Heavy duty band, stapled, holds fibres securely.

Heavy gauge rust-proof metal head and collars.

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New England Meeting

(*Continued from page* 578)

trol or handle the 'curiosity seekers' at large fires?" The panel and delegates agreed on the causes: audible alarms; indiscriminate broadcasting and televising of emergencies; failure to 'police' roads and highways; lack of proper regulatory measures, and inability to enforce those in existence. Greater cooperation with law-and-order authorities was urged, as well as enlistment of the aid of radio and television stations and the press. The problem is worse with the small fire than with the big, in some areas, it was disclosed. This subject also will receive further consideration by the Association.

Highlight of the final session was the election of officers for the coming year. The following slate was unanimously approved: For president, Chief George Graham, Bristol, Ct.; 1st vice-president, Chief John Keefe, Bellows Falls, Vt.; 2nd vice-president, Chief Howard Jose, South Portland, Me.; secretary-treasurer (re-elected), Chief John W. O'Hearn, Watertown, Mass.; directors: Chiefs Henri E. Fortier, Manville, R. I.; Oliver T. Sanborn, Portland, Maine; Clarence H. Greene, Concord, N. H.; Alfred Koltonski, Rutland, Vt.; Thomas Slaman, Wellesley, Mass.; A. J. Cote, Woonsocket, R. I.; and Francis Dagon, E. Hartford, Ct.

On taking office, the new president re-

appointed Chief Wm. J. Dooling, Hood Rubber Co., Watertown, Mass., sergeant-at-arms; Andrew Palmer, Woonsocket, R. I., press representative, and Chief Roi Woolley of FIRE ENGINEERING, technical consultant. Chaplains re-appointed were Rev. Michael F. Collins, Dorchester, Mass., and Rev. John P. Fitzsimmons, Belmont, Mass.

Retiring president Fortier was presented with the gift of a "comfy chair" and the past-president's gold badge.

The report of Secretary-Treasurer John O'Hearn, who received an ovation, showed the Association in excellent financial condition. Chief Slaman, chairman of the Exhibit Committee, reported a sell-out of 40 exhibits.

The entertainment features, with emphasis on the distaff program, included boat rides; bingo games; lobster-clam-chicken bake (attended by nearly the entire membership); an underwater exhibition of the use of self-contained air masks; fashion show, and two evenings' showings of colored motion pictures of previous conferences by the Association's official photographer, Lieut. Carroll of Brookline, Mass.

Following a cocktail party, tendered by Host Smith and family, came the Annual Banquet with president Henri Fortier presiding. The guest was Hon. Hugh Gregg, Governor of New Hampshire, and the speaker of the evening was Hon. William E. Powers, Attorney General of the State of Rhode Island, who received a resounding ovation. Among the other speakers was Chief Henry Thomas, president of the I.A.F.C.

World Wide Fire News

By Roi B. Woolley

Confusion Over Coventry C.D. Corps Quitting

Coventry (England) voted its Civil Defense Corps out of business in April, as a waste of time and money. In May, the Corps itself failed to agree with civic brass, and petitioned the Home Secretary, Sir David Maxwell Fyfe, asking him to keep the corps going.

Repercussions of the decision of the City Council of the community that was devastated in the Nazi blitz of November 14, 1940, to end civil defense because it was a waste, in view of the power of the hydrogen bomb, were immediate and vehement in some quarters. Nevertheless several other City Councils throughout the "Tight Little Isle" made similar decisions in May.

The Coventry petition calls on the Home Secretary to exercise his power and authority to prevent the city from "depriving the citizens of what is considered an essential service."

* * *

Philadelphia Plans Underground Firehouse

Construction of an underground combination parking garage and fire station in Philadelphia was proposed in April by Managing Director Robert K. Sawyer. The site proposed is beneath the old Broad Street Station, in the half block bounded by Penn Square, 15th st., Pennsylvania blvd. and Market st.

Sawyer said the idea originated with Brig. Gen. Brenton G. Wallace of a local architectural firm, and he has asked the Philadelphia Parking Authority to study the idea.

Plans call for a 600-car garage and

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Cool, fresh AIR

in hazardous atmospheres!

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It goes on and is ready for action in seconds. Just turn on the valve and you're ready to go. No complicated training or practice is necessary.

Other exclusive AIR-PAK features include a large-dial easy to read gage for constant, dependable check of remaining air supply. Cool air absolutely prevents lens fogging. The AIR-PAK is the most economical all-purpose breathing protection available. Operates for as little as 50c per hour with no waste.

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MODEL 20 SIRENLITE for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

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- RUGGED
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Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

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New! AUDIO HAILER

WORLD'S MOST POWERFUL All-in-One POWER MEGAPHONE

NOW IT'S AUDIO HAILER for long-range hailing with the POWER and CLARITY you need to be HEARD and UNDERSTOOD above noise and wind at great distances. Rugged, weatherproof, quality construction by AUDIO—originators of the Power Megaphone, suppliers to the U. S. Navy. *FREE literature.*

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- 16 TIMES MORE POWERFUL THAN ANY OTHER PORTABLE POWER MEGAPHONE!
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- LONG BATTERY LIFE: OVER 5,000 TEN-SECOND MESSAGES!

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would include a fire station under what would be landscaped as a park. It is reported Fire Commissioner Frank L. McNamee has been looking around for a site for a central-city fire station for several months. Estimated costs of the venture amount to as much as $2,250,000.

There remains some difference of opinion over the question of tax support of the property. Preliminary plans, which do not include the fire station, show five underground levels, each 318 ft. by 139 ft. The total depth of the garage would be 55 ft.

The city planning director is presently at odds with the City Planning Commission, of which he is a member. "The inclusion of a fire station would solve the problem of the Fire Department" said Sawyer. Commissioner McNamee has long had in mind locating a new central-city station—if and when authorized—underground to minimize the effects of atomic attack.

* * *

C.D. Volunteer Critically Hurt

G. Frank Slawson, about 64, chairman of the Delaware (N. Y.) County Board of Supervisors, was injured critically May 10th in Dehi, N. Y., when a civil defense sling collapsed and plunged him 25 feet to a crushed rock driveway during a rescue demonstration.

Mr. Slawson, a retired dairyman, had volunteered to be a "victim" in the local civil defense demonstration. He had been trussed in a rescue "bag" and had been lowered about 10 feet from a third-story window when a cable apparently became loose.

The cause of the accident was not determined immediately. A small crowd standing in the rain at the Delhi firehouse witnessed the accident. Mr. Slawson, long interested in civil defense work, was placed on the critical list in Delhi Hospital.

* * *

Air Force "Outlaws" Sonic Blasts

The U. S. Air Force put into effect May 7th, last a policy of outlawing the sonic "boom."

A scheduled demonstration of three 86F jet fighters of the breaking of the sound barrier was cancelled at the last minute May 7th because of the newly-issued Pentagon order that there would henceforth be no more sonic blasts in populated areas.

Pilots who plan to exceed the speed of sound, about 760 M.P.H. at high altitudes, must do so hereafter in localities where the sharp explosive reports that result will not annoy or frighten anyone, or break any windows. Some people have mistaken the blasts for bombing.

Air experts say, however, that with the new supersonic fighters' blasts may result anyway from slight changes of direction or altitude.

* * *

From the News Ticker

Black rain fell in Tokyo May 31, arousing some panic until the weather bureau explained the rain had merely absorbed the dust and smoke above the city. . . . Thirty West Berlin teenagers and their teacher suffered burns May 29th, when an explosion broke up a chemistry lesson in a French sector school yard. . . . In May fire swept the zoological museum of Bogor Botanical Garden 35 miles from Jakarta, Indonesia, resulting in widespread loss of scientific material and total loss of the hall of mammals. The museum's scientific collections, which include 3 mil-

lion insect specimens, were saved. . . . In Montreal, Que., a 30-year-old widow saturated her two children with gasoline and burned them to death and then took her own life. . . . Four children died in a blazing bungalow in Killigrews, Newfoundland, on May 30. William J. Cluney groped through smoke and rescued his wife, mother-in-law and five of his children, but the remaining four died when flames prevented his re-entering the building. . . . A bootleg fireworks factory blew up in Duque de Caixas, Brazil, May 22, killing four persons, hospitalizing eleven, and destroying or damaging twenty homes within a 300-yard radius. . . . Custodian of a fire siren in a British village refused recently to sound the signal. His reason was that he believed the alarm was given by a joker because the address was his home. . . . A delayed report states that in Ithaca, Ohio, an auxiliary tank fell from a National Guard plane and exploded after crashing through the roof of the Evangelical - United Brethren Church. The church burned to the ground. . . . Eleven nuns led 122 children to safety from a fire that destroyed a convent in the southern Manitoba village of Bruxlles May 4. Fire started in a gym and raced through two large frame buildings housing the Ursuline Convent and the school. The children were in classes when the alarm sounded but paraded quietly outdoors in orderly columns under the direction of the nuns. . . . A Ford Motor Co worker who left a note saying "God has been wanting me to do this" was found dead early May 1 last, in the rubble of a dynamite explosion which injured nine persons in a Dearborn, Mich., hotel. Police say the victim threw two bundles of dynamite into the Tuxedo hotel. Blasts ripped a 20-foot square hole in a wall of the building in which 90 persons live. . . . On April 30th last a collision between an empty gasoline barge and the 7,200-ton British motorship Debret led to an explosion of fumes and five-hour fire aboard the barge. The Coast Guard investigated the Debret's alleged failure to stop and give aid to the barge. The towing tug Vigilant managed to rescue the barge captain. Accident occurred in the San Joaquin River delta above San Francisco Bay. . . . Fred Lowrey of Niagara Falls, Ont., was burned to death when a fire razed a shed in which he was sleeping to protect his tools from burglars. . . . Twelve men were killed and at least 200 injured June 3 by the explosion of a furnace in a glass factory on the southern edge of Tehran. . . . Three men and a woman were burned to death in a fire that destroyed their small frame house in Carrying Place, Ontario, in May. A 14-year-old girl leaped safely from her bedroom window on the second floor. . . . Residents of Flin Flon, Manitoba, were given an opportunity in May to train for civil defense, including handling fire hazards. Fire Chief Walter Redman took an active part in the operations. . . . The flaming, kerosene-soaked body of a 63-year-old nun was found in a shed by other sisters of the Austere Order of Poor Clare's convent in Baddesley Clinton, England, May 31. Members of the group returning to their cells from prayer, saw smoke coming from the shed and discovered the Sister's body. The convent inmates wear rough brown habits and go barefoot. Most of them have not seen the outside world in more than 25 years.

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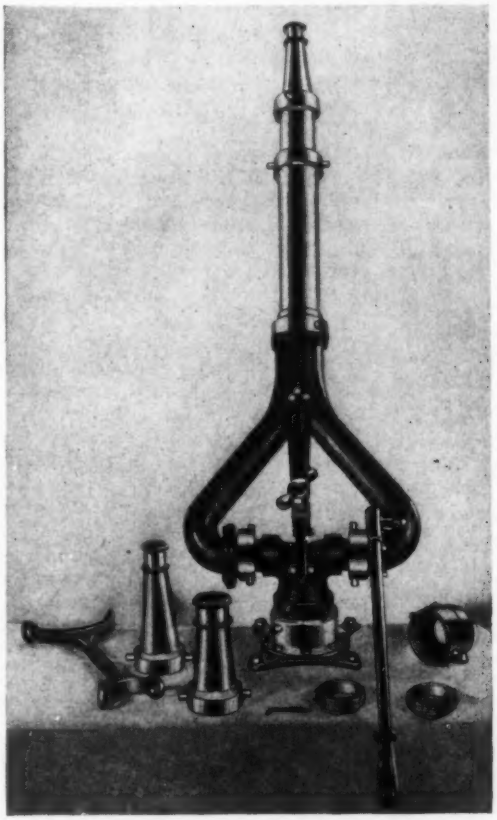

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The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

MERITS OF SELF-CONTAINED BREATHING EQUIPMENT

SELDOM has this Journal found such universal affirmation to questions asked in its Round Tables as this one on self-contained breathing equipment.

It is universally agreed that the advantages accruing from the use of proper respiratory protection of this type do combine to reduce the fire losses, largely because they enable fire fighters to more quickly and safely locate the source of the fire and get to work on it while performing search and rescue, and ventilation.

A contributory factor emphasized by respondents is the feeling of greater confidence and security which the use of self-contained breathing apparatus engenders. A number of chiefs stress the importance of teamwork—of using such masks in tandem. Also, there is almost universal agreement that there has not been sufficient such equipment installed through fire departments (as contrasted with the limited number of units that may be widely scattered among rescue or squad units only).

Many respondents emphasize the wisdom of proper training or personnel in the use of such equipment. This apparently is an important factor in encouraging efficient use.

Readers are invited to participate in this discussion which will be continued in the August issue. Address replies to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

Wallace F. Gannon, Chief, Muskegon, Mich.: From my personal observation, the use of self-contained breathing equipment not only can reduce fire loss but it has done so in our department, in many instances.

It certainly does help to locate the fire more quickly. Self-contained breathing apparatus enables the men to get into a smoke-filled, gas-contained atmosphere that would otherwise be impossible to enter.

The men are much less reluctant to enter a smoke-filled or flame-laden building when they are wearing self-contained breathing apparatus. Our men are trained to realize that this apparatus will do three things for them:

1. They can don and use the mask if their breathing is labored.
2. They don't have to worry about the concentration of gases being more than 2½ per cent.
3. They don't have to worry about a lack of oxygen when entering a smoke-filled basement.

On March 16, 1945, we lost four men in a bulkhead of an old ship that was tied up at our local dock. The aftermath of this tragedy was a State law stipulating that two self-contained breathing apparatus must be at every fire, unless it is a predetermined grass or brush fire. The use of masks is one of the projects of our training program that is given special attention.

F. E. Wood, Chief, Wichita, Kans.: We have used self-contained breathing equipment for many years, and I am definitely of the opinion that this equipment has contributed materially in reducing our fire loss.

In many instances we have experienced situations where the source of the fire was located and controlled with a minimum of time and effort. We find the mask to be extremely valuable where venting is difficult. Also, over a period of years, there has been a noticeable reduction in cases of sick leave resulting from toxic gases.

To have confidence in the mask is of vital importance. Naturally, this requires proper training, along with actual experience under various conditions. After acquiring such knowledge, the men are not, in most cases, reluctant to enter smoky or fume-laden buildings.

Ben J. Zahn, Chief, Ann Arbor, Mich.: In our department we have used various types of masks and breathing equipment for quite a few years, and since 1947 have been using the Chemox cannister type that permits

HERE ARE THE QUESTIONS

1. **From personal experience, or from observation, are you convinced that the use of self-contained breathing equipment can reduce fire loss?**
2. **Have you found that self-contained breathing equipment enables your men to locate the source of a fire quicker?**
3. **Do you find your men are less reluctant to enter smoky or fume-laden buildings when they can do so wearing self-contained breathing apparatus?**

men to stay in smoky places for 45 minutes. Because of this, many fires can be extinguished that otherwise might become serious, thereby reducing fire losses. Firemen equipped with proper breathing equipment naturally feel more secure than those with none, and it just stands to reason that men properly equipped can get at the seat of the fire quicker. We could not get along without our equipment since we have found out what can be done with it.

Nick J. Palla, Jr., Chief, East Chicago, Ind.: From personal and general observation, I am very much convinced that self-contained breathing equipment can and will reduce fires.

This equipment enables me to get to the base of the fire without hesitation, and by so doing, cuts fire losses to a minimum.

J. P. Newark, Chief, Grand Forks, N. D.: We have found that self-contained breathing equipment does reduce fire loss in a good many cases, especially where the smoke is heavy and the source of fire is hard to locate. It also permits the hose men to stay in the building for longer periods in heavy smoke. However, we have found that physical exertion is very limited with most types of masks.

Frank H. Burns, Chief, Grand Rapids, Mich.: The use of such equipment enables men to reach the seat of the fire more quickly and with safety and thereby should, in many cases, definitely reduce fire loss.

Our men enter buildings with confidence that they could not possibly enter without such equipment.

Frank E. Schroeder, Chief, Everett, Wash.: It has been my personal experience that the introduction of self-contained breathing equipment into the fire service has been a very important factor in keeping the losses by fire from increasing much higher than they have.

The use of self-contained breathing equipment has not only enabled our men to locate the source of a fire but has been the difference between getting at the fire in time to be effective or sustaining a serious loss.

Our men show much less reluctance to enter smoky buildings when wearing self-contained breathing equipment.

August Schalk, Chief, Champaign, Ill.: We are firm believers in using smoke masks, and we definitely believe they have helped locate a fire more quickly and have also reduced the fire losses on some fires.

Without a doubt, these smoke masks have saved on the wear and tear of the firemen's lungs and body as a whole.

Gayle Coger, Chief Engineer, Fresno, Cal.: Through my personal experience and observation, I feel that self-contained breathing equipment can reduce fire losses if they are readily available in sufficient amounts to make it possible for personnel to enter buildings and operate fire extinguishing agents directly on base of fire. It also is a great help to inside ventilation and speeds up rescue work.

I have found that self-contained breathing equipment enables personnel to reach source of fire quickly and extinguish with a minimum quantity of water.

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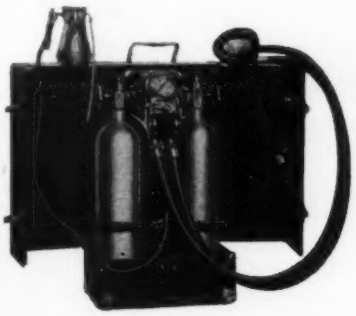

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confidence in self-contained breathing equipment and readily enter buildings where it would otherwise be impossible to do so.

L. H. Ashby, Chief, Parkersburg, W. Va.: We have for some time been using self-contained breathing apparatus in our department and have used them on several occasions to reduce fire loss by locating the source of the fire more quickly. My men have more confidence in themselves when they enter a smoke and fume-filled building with this equipment.

However, men must be thoroughly familiar with the equipment and should have ample opportunity to wear the masks in smoke chambers and under other controlled conditions. In working at a fire it is far safer to work in pairs while wearing masks. Each mask purchased for fire department use should be approved by the U. S. Bureau of Mines.

Forrest B. Lucas, Chief, Dayton, Ohio: With the use of masks, a recent fire in our city was quickly extinguished. It would have been impossible to enter the building without masks for at least thirty minutes after the fire was extinguished, because of pungent fumes.

Masks make it possible to ventilate and to reach the seat of ninety-nine per cent of our fires with an extinguishing agent very quickly. You are not compelled to wait until the fire burns its way to you.

While the men are not less reluctant to enter smoky or fume-laden buildings, they can penetrate farther, stay for a longer period of time and be in better physical condition for the next fire.

In general, breathing equipment definitely helps to reduce loss of life and property damage.

Donald S. Charles, Chief, Charlotte, N. C.: From personal experience, we are convinced that the use of self-contained breathing equipment can definitely be a contributing factor in reducing fire losses.

Through the use of self-contained breathing equipment our men can locate the source and extinguish the fire much quicker.

From experience the men know they can depend on this equipment to provide the best possible protection under such conditions.

Lawrence F. Lynch, Chief, Brockton, Mass.: By the use of such equipment the men can locate the seat of the fire more quickly in smoke-filled buildings. In the past, without such equipment, men would be forced to leave the buildings because of smoke and fumes and lack of oxygen before they reached the seat of the fire.

In rescue work, men equipped with this type mask can cover a larger area and do it in less time compared to men not so equipped. This type of equipment is absolutely necessary for fire department work.

I believe a man has more confidence in performing certain jobs if he has this type of equipment.

T. E. Yarnton, Chief, Regina, Sask.: By using self-contained breathing equipment, the fire loss can be cut down because it enables firemen to get in to the seat of the fire more quickly and therefore control it faster.

In my opinion, men are more apt to get in quickly when they know they have positive protection and where there is no indication of burned air or smells coming through the mask, as is sometimes the case in the filter-type mask.

F. Pimental, Chief, Albany, Cal.: I have found definitely that fire losses have been reduced where self-contained masks have been used. This type of breathing equipment definitely enables men to get into the area of the fire much more quickly than with any other type. My own experience has revealed that if such masks could be made smaller and with less expense, they would be used more extensively. The self-contained mask has a definite psychological effect upon the men in entering a smoke-filled area. I believe the knowledge of breathing air from a sealed container is the reason for this attitude as well as entering in a walking position, with no fear of a depleted air supply.

E. L. Surfus, Chief, Eugene, Ore.: I have found that since the men have great faith in the self-contained air breathing apparatus, they use them more often, which, in turn, gets them to the seat of the fire more quickly with the resultant lower fire loss. Our department is equipped with fifteen self-contained air breathing apparatus.

Charles E. Lane, Chief, Great Falls, Mont.: The last few years we have used smoke masks for entering smoky buildings and are amazed at the reduction in fire damage by getting to the base of the fire.

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It definitely gives the firemen confidence in entering a smoky fire.

We find that most of the men will enter with a mask, but there are some who are reluctant to enter even with one.

We have instructed our men to use the mask at all times when the smoke is thick. We feel that in so doing they will be more efficient and the fire will be extinguished more quickly.

John C. Klinck, Chief, Memphis, Tenn.: We could give several case histories where self-contained breathing equipment allowed us to enter and put out the fire, where otherwise, due to the possibility of dangerous gases, men could not have entered.

All truck crews and pumper crews located in truck houses are specially trained in the use of self-contained breathing apparatus under actual fire and smoke conditions. Until this type of training was given, men were reluctant due to manipulation of safety valve to enter a smoke-filled building. All probationary men are given this type of training.

Edgar M. Grass, Chief, Kansas City, Mo.: Through both experience and observation, I am firmly convinced that the proper use of self-contained breathing apparatus can and will reduce our fire losses.

We have found that the use of self-contained breathing apparatus enables our men to locate the origin of the fire more quickly because it relieves the men of unnecessary punishment sometimes encountered in buildings heavily charged with smoke.

At no time do our men display a reluctant attitude when called upon to enter a smoke-filled building when using a self-contained mask. This is due to a rigid training program within our department covering the proper use of this equipment, the protection they render to the wearer, also the over-all value and advantages of its use.

William Ruehle, Chief, St. Cloud, Minn.: The use of self-contained breathing equipment can reduce fire losses. When men wear this equipment, they are ready for the job with the fullest protection, and this confidence speeds up the work of fire fighting without further speculation as to their safety and especially since the time element is most important toward cutting down fire losses.

Wearing self-contained breathing equipment enables men to locate the source of the fire more quickly because every doubt of the possibility of ill effects from toxic gases and oxygen deficiency has been guarded against. Having this full protection, the men do not hesitate to move forward quickly to get at the source of the fire.

Firemen are less reluctant to enter smoky buildings because the mask gives them full protection and the confidence to do the work quickly and efficiently.

John J. Nelligan, Chief, Bangor, Maine: We feel that the use of self-contained breathing apparatus does reduce fire loss. Men are able to locate the source of a fire more readily with this equipment.

Men are able to go where it would be impossible to without a mask. Another consideration is the fact that

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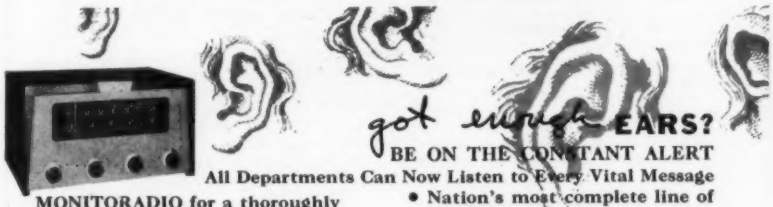

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men are not overcome or made sick, which was the case in many instances where they did not use masks. Also it would take two men to carry one of their buddies out if overcome, which means loss of manpower.

* * *

This is in answer to a previous round table on the purchase, repair, maintenance and inspection of fire hydrants.

M. K. Steensland, Chief, Amery, Wis.: The fire hydrants are used by both the Fire Department and the Street and Sewer Department. We have no difficulty with the street personnel as far as their use of hydrants is concerned. In fact, we have two department volunteers who are working for the city in the Water Department, and as such are concerned about proper care and operation of fire hydrants.

The hydrants are purchased by the Water Department. However, they are very cooperative if we have any suggestions as to size or hose connections. Until the late years, hydrant maintenance was something to be desired. We in the Fire Department saw the need for one or two inspections a year, and now the Water Department has taken the job over for the most part. The Water Department makes all hydrant repairs. Both the Fire Department and Water Department mutually agree on location of hydrants.

Donald S. Charles, Chief, Charlotte, N. C.: Fire hydrants are used by the Street, Sanitary and Engineering Departments in addition to the Fire Department.

The Water Department purchases, maintains, and repairs all hydrants. Locations are recommended by the Fire Department, but the final determination is made by the Water Department. Both departments make inspections. At any time the Fire Department finds a hydrant in need of repair, it is promptly reported to the Water Department.

C. N. Penn, Chief, Dallas, Tex.: The Water Department is granted permission to use fire hydrants.

The Water Department purchases, maintains, repairs and inspects all hydrants.

When sub-divisions are opened for development, the Water Department requires the developer to install fire hydrants in accordance with the regulations of the Texas State Insurance Commission. Requests for fire hydrants, in areas where there is an insufficient number, are made to the Water Department by the Fire Department.

Edward E. Wischer, Chief, Milwaukee, Wis.: Permission can be obtained with deposit for wrench, permit fee, and payment for water used in filling tanks, back-fills, etc., by private individuals. Municipal departments using hydrants include the Department of Public Works, The Street Department and the Sanitation Department.

The Water Department purchases, maintains and repairs hydrants. The Fire Department is consulted in the placement of hydrants and recommends locations for fire fighting purposes.

The Water Department makes inspections. Anything unusual is also reported by the Fire Department when encountered.

A. J. Mullaney, Assistant Fire Commissioner, Chicago, Ill.: The Water Department and Sprinkler Department also use fire hydrants. Contractors and wreckers must get a permit before they may use them.

The Water Department purchases, maintains and repairs the hydrants, and both the Fire Department and the Water Department determine where the hydrants are to be placed and make inspections. The Fire Department makes two inspections each year and reports defects to the Water Department.

Walter G. Strickfaden, Chief, Columbus, Ohio: We have not been able to limit the use of fire hydrants to the Fire Department only. They are used by the Divisions of Engineering, Street Cleaning, Street Repair and also by sewer contractors.

The Fire Department purchases, maintains, repairs and inspects all hydrants, as well as determines where hydrants should be located.

R. C. Malmquist, Chief, Minneapolis, Minn.: Fire hydrants are used by the Street Department in flushing streets; plumbers use them for puddling excavations; contractors use them for wetting down purposes when wrecking buildings in downtown area.

The Water Department purchases, repairs, maintains and inspects hydrants. They also determine where hydrants may be placed, although the Fire Department can make recommendations.

Walter J. Flores, Chief, Allentown, Pa.: We have been able to limit about 95

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per cent of the use of fire hydrants to the Fire Department. The Street Department uses them to fill tank trucks for street flushing.

The Water Department purchases, maintains, repairs and inspects hydrants. It, with the help of the Fire Department determines the location of hydrants.

The City of Allentown presently has a water system second to none, having recently increased the daily output to a great degree. This project was completed at a cost of over 3 million dollars. Due to the rapid expansion of low cost homes in the outlying districts, 40 new hydrants were installed since the summer of 1953. There are 1293 hydrants in service in Allentown.

Robert Mackenzie, Chief, Sydney, N. S.: Fire hydrants are used by the Works Department.

The Fire Department purchases and maintains the hydrants and determines where they are to be located, while the Water Department repairs and inspects them.

V. C. Brightman, Chief, Kingston, Ont.: We have not been able to limit the use of fire hydrants to the Fire Department. They are also used by the Board of Works.

The Kingston Public Utilities purchases' maintains, repairs and inspects hydrants. During the winter months, whenever a hydrant is used by the Fire Department, the Kingston Public Utilities are notified. This arrangement is proving satisfactory.

The Fire Chief determines where fire hydrants are to be placed.

James T. Blamey, Chief, Spokane, Wash.: We have not been entirely successful in limiting the use of fire hydrants. They are used by the Water Department, the Street Department and the Sewer Division. In addition, private contractors may use them provided they get permission from the city.

The Water Department purchases, repairs and maintains the hydrants. New installations in new districts are determined by the Fire Department, while the Water Department takes care of old installations being moved. The Water Department inspects hydrants. A chief officer of the Fire Department will check for exact location and the type of connection.

F. C. MacGillivray, Chief, Halifax, N. S.: The Public Works Department may also use fire hydrants.

The Public Service Commission purchases, maintains, repairs and inspects hydrants. The Chief of the Fire Department determines where they are to be placed.

L. Strange, Chief of Police and Fire, St. Johns, Newfoundland: Fire hydrants are used by the Water Department and by schools and colleges for flooding rinks.

The Municipal Water Department purchases, maintains, repairs and inspects hydrants. They also determine where they should be placed, with the assistance of the Fire Department.

* * *

The following is in answer to a question on maintaining a 24-hour watch.

Robert M. Brown, Nozzleman, Union Fire Company #1, Oxford, Pa.: We have maintained a 24-hour house watch for the past 27 years.

Our company at the present time

MYSTERY NOZZLE

Used by the Navy on Fire Boats in World War II, the JN 200 has a capacity of 1500 gallons per minute. It has 3½" National Standard threads and can be adapted to any 2½" Fire Department thread. Equipped with handles for adjusting the stream it features all the various degrees of fog—straight stream and shut off. Solid straight stream size range from booster to deluge. It is recommended for fire boats, portable deluge nozzles, turret guns and wherever water volume and fog are required. Lightweight—made of high tensile aluminum.

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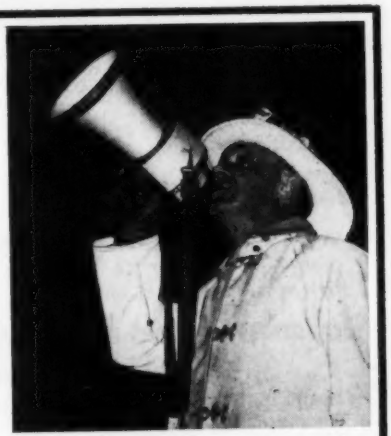

For the chief and fire department officer — and for handling emergencies, STEWART-WARNER Power Megaphone provides quick clear projection of voice up to ¼ mile.

- Completely portable
- Entirely self-contained
- Uses six ordinary flashlight batteries
- Horn diameter—8½ in.
- Instant trigger action; no warm up required
- Weight—5 lbs. 5 ozs.
- Long battery life
- Range (depending on noise)—tested up to ¼ mile
- Approved for F.C.D.A. Matching Funds

Write for name of your nearest sales representative.

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STEWART SW WARNER

covers 81 square miles in our own territory; also serves regular duty to over 70 square miles in the territory of other companies and assists still other companies to cover approximately 35 square miles more. Total the three figures, and we serve approximately 186 square miles in two states (Pennsylvania and Maryland).

We support, out of our own funds, a man who is paid a regular salary and who lives in a 6-room apartment on the third floor of the fire station. In addition to his salary, he receives two weeks vacation a year and one day off a week, free electric, gas and heat. During his day off, a substitute caretaker is on duty.

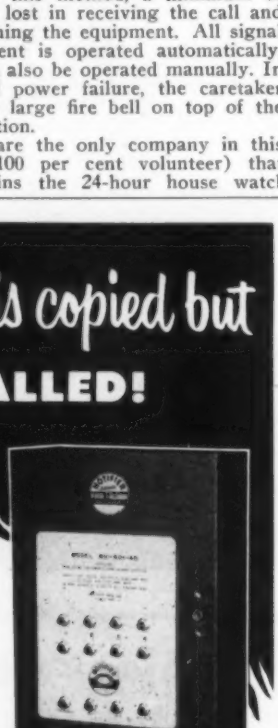
All incoming fire calls are received in the following manner. The telephone operator in the local exchange pushes off the siren by a Bell System relay automatic signal system, which in connection with a Federal automatic signal timer, blows the siren a cycle of three blasts, 15-second blast with 15-second intervals. The telephone operator when touching off the siren also automatically rings one set of gong bells in apparatus room and sets off two sets of telephone bells, one set at receiving desk just off apparatus room and the other set in the caretaker's apartment for night calls.

With this method, a minimum of time is lost in receiving the call and dispatching the equipment. All signal equipment is operated automatically, but can also be operated manually. In case of power failure, the caretaker rings a large fire bell on top of the fire station.

We are the only company in this area (100 per cent volunteer) that maintains the 24-hour house watch with such efficiency. The average time from the first sound of the siren until trucks are on the highway headed to the fire is 60-75 seconds in the daytime and 75 to 90 seconds at night. Any improvement would have to come from the members themselves.

Our company is 100 per cent volunteer. All active members, officers (including the fire chief), drivers and fire police serve without any pay whatsoever. We have an active force of 160 firemen.

NOTIFIER is copied but NEVER EQUALLED!



We dare you to compare NOTIFIER with any fire detection equipment on the market. Compare them piece by piece, part by part, and **then compare them for service and dependability** — NO MANUFACTURER OF FIRE DETECTION EQUIPMENT HAS EQUALLED NOTIFIER'S DEVELOPMENTS!

World's First and Best U. L. Listed

Fully automatic fire detection system — complete from protected property into fire station control panel.

Designed to meet any requirement

Notifier is designed to meet state and municipal requirements in multiple dwellings, hotels, hospitals, schools, factories, institutions, nursing homes, etc. DEALERSHIPS AVAILABLE.

NOTIFIER Automatic FIRE ALARM

Your Inquiries Are Invited — Write To

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239 South 11th Street
Lincoln, Nebraska

Persons in the News

Daniel Mapes Honored

Daniel Mapes, vice-president of Walter Kidde and Company, Belleville, N. J., was one of three leaders of industry and engineering to receive the honorary degree of Doctor of Engineering at Stevens Institute of Technology on June 12. The awards were made at the commencement exercises of the Hoboken, N. J., engineering college.

Daniel Mapes

Mr. Mapes, who was graduated from Stevens with the degree of Mechanical Engineering in 1924, joined Walter Kidde and Company in the same year and began specializing in the development of carbon dioxide fire extinguishers. His achievements include development of a new method of making lightweight cylinders to hold compressed gases and perfection of a process for cold drawing alloy steel into seamless pressure containers which cut previous production costs by 75%. Mr. Mapes also perfected a shatterproof wirebound cylinder during World War II which made possible the safe use of millions of containers of oxygen and carbon dioxide on military aircraft. In the fields of fire extinguishers, pressure cylinders and pneumatic compressors he holds 65 U. S. patents and 87 foreign patents.

Others who had the Doctor of Engineering degree conferred on them at the same ceremonies were Vice Admiral Edward L. Cochrane (U. S. N. retired), now vice-president of Massachusetts Institute of Technology, and Morse G. Dial, president of Union Carbide and Carbon Corporation.

Benton Quits Signal Post

Perry Benton will leave the post of superintendent of Dayton division of telegraphs and signals later this year, it is announced.

Benton, who is 67, will retire to Florida, after heading the signal division since 1931.

The retiring superintendent came to Dayton from Panama in 1929 to represent the Gamewell Company in that area. At that time Dayton was installing a new signal for the fire and police departments.

The division was created as part of the city's safety department and Benton was engaged to head it. Later he supervised the installation of the radio communications system in the police division (which included fire radio).

Changes in L. A. County Department

Battalion Chief Des Barton has been promoted to Assistant Chief in charge of Division 4, Special Services, Los Angeles County Fire Department.

Asst. Chief Harvey W. Crutchfield moves from Division 4 to command of Division 1, replacing Chief Ralph A. Williams who retired June 1. Chief Williams served the department for 27 years. Previously he was a captain in the Kansas City, Mo., F.D.

Chief Barton formerly commanded Battalion 6 which takes in the Malibu area of L. A. County.—CLIFF DEKTAR

Chief R. G. Duren Retires

Ruben G. Duren retired as chief of the Greenwood, Miss., Fire Department June 1, 1954, after almost 23 years of service with the department, 11 years as its head, to join the American-La-France-Foamite Corporation with headquarters at the Atlanta office, 181 Spring Street.

Chief Duren joined the department in 1931 and advanced through all grades to become Assistant Chief in 1942. In 1943 he succeeded G. T. Hastings as Chief. He was one of the organizers of the Mississippi State Firemen's Association and served three years as its president. He was Mississippi vice-president of the International Association of Fire Chiefs for four years. He served two years as vice-president of the Southeastern Association of Fire Chiefs, later becoming its president.

Chief Duren was chairman of numerous committees of the several organizations he represented, including the Committee that organized the Mississippi State Fire School at Mississippi State Fire College.

Maine Has First Arson Seminar

The First Annual Seminar on Arson and Fire Prevention in the State of Maine was held at Belgrade Lakes, June 16, 17, 18, last, sponsored by the Division of Fire Prevention, Insurance Department. The Hon. George F. Mahoney, State Insurance Commissioner presided.

Subjects reviewed included "Legal Interpretations, Laws Relating to Arson and Fire Prevention" which was handled by a Panel in which Fire Chiefs Harry Marr, Portland; Horace Jose, So. Portland; Richard Frates, Bath; Arthur Emmons, Saco, and Van Russell of Rockland participated.

Other topics discussed were "Duties of an adjuster"; "Arson investigations"; "Investigating automobile fires"; "Medical, legal aspects of death by fire"; and "Pyromania." Fire prevention topics included "Pipeline on Wheels"; "Safety With Liquified Petroleum Gas," and "Safety in Explosives."

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Specify HALE

Why do users of Hale Fire Pumps specify "Hale Pump" when they buy new apparatus?

Because these men have learned through practical experience HALE VALUE in terms of:

• Dependability • Flexible Performance • Efficiency

For 39 years Hale-equipped Fire Pumpers have upheld a high standard of dependability . . . a dependability that has won the respect of users all over the world. Hale Fire Pumps are sold only through Manufacturers of Quality Apparatus.

HALE FIRE PUMPS are built in all STANDARD CAPACITIES

Write today for NEW FOLDERS on Hale Fire Pumps . . . built in all standard capacities.

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FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

FASTER FIRE EXTINGUISHING

WITH UNOX PENETRANTS WETTER WATER

UNOX is the unexcelled penetrant for making wet water, which fire chiefs, fire fighting and safety engineers say is the greatest fire extinguishing improvement of the decade for Class A and B fires.

UNOX gives plain water a spreading, penetrating and emulsifying action that sends it straight to the heart of the fire . . . puts it out and keeps it out.

Wet Water puts fires out 3 to 4 times faster, with only ⅓ or ¼ the amount of plain water required.

UNOX is Underwriters' approved. Get the full story of UNOX from your nearest dealer or write us for complete information about wetter water fire fighting, including results of actual fire extinguishing tests.

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A Division of McFARLAND MANUFACTURING CORPORATION

Book Shelf

INDUSTRIAL FIRE BRIGADES TRAINING MANUAL, published by the National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., 160 pages, 385 illustrations. Printed on glossy paper, 8½ by 11-inch page size, sewed binding (so book opens flat) and two-color paper cover. Single copy price $3.25.

The National Fire Protection Association has issued a new (1954) edition of its Industrial Fire Brigades Training Manual. Approxmately 30,000 copies of earlier editions of the manual, which is prepared under the sponsorship of the Association's Committee on Firemen's Training, have been put in use in industry. The new edition contains amplifications of fundamentals covered in earlier editions, a new format and much new material. Of 385 illustrations, 176 are newly drawn, corrected or photographed especially for this edition.

A completely new treatment of fire fighting is designed to show members of industrial fire brigades just what it is they are trying to do in fighting fires. The recommended procedures cover how sprinklers and hose streams should be used. The text explains how fires grow, how direct attack methods are successful up to the "flashover" stage of a fire. It explains why, at or about that point, techniques of fire fighting with fog or spray streams are effective. There is a fine treatment of ventilation and fire company position-work at fires.

Material on fire streams has been completely rewritten in the light of current primary use of fog or spray streams in fire fighting.

The new edition includes a manuscript on the choice and use of fire extinguishers which is completely new. For example, it has been customary in teaching use of fire extinguishers to stress three conventional types of fires: Class A, ordinary combustibles, Class B, flammable liquids and Class C, electrical fires. Historically, extinguishers have been classified according to their suitability for these three categories of fires. The new text goes much further. It describes, not three, but ten classes of conditions in industry for which particular first-aid fire appliances are needed.

The table of contents includes an introductory section on Training of Plant Fire Brigades and the following chapters: (1) Plant Fire Protection, (2) Fire Causes and Hazards, (3) Making Forcible Entry, (4) Handling Rope, (5) Using Fire Extinguishers, (6) Handling Ladders, (7) Handling Hose, (8) Producing Effective Fire Streams, (9) Salvage Practice, (10) Rescue Work, (11) Inspection of Equipment (12) Fire Fighting.

FIRST AID AND RESUSCIATION, by Carl B. Young, Jr.; Charles C. Thomas, Publisher, Springfield, Ill.; 352 pages, 168 illustrations; cloth bound; price $8.50.

The author is an instructor in first aid and former assistant director, Harris County Emergency Corps, Inc., Houston, Texas. He is a member of the International Rescue and First Aid Association and a First Lieutenant in the Medical Service Corps, U.S.A.R.

The manual is written from practical experience and is intended to supplement the American Red Cross manual on the subject. It is intended primarily for those who have had no training in medicine or related fields, but who are concerned with first aid in all its forms. Its 35 chapters cover such subjects as shock; respiratory and circulatory systems; resuscitation; transportation of the seriously ill or injured; procedures to be carried out at the scene of an emergency; proper equipment for an emergency ambulance; acute heart, indigestion, alcoholic and drug intoxication emergencies; respiratory emergencies; electric shock; submersion; noxious gases; first aid procedures at the scene of a fire; asphyxia of the newborn; bronchial asthma, pneumonia, burns, hemorrhage, etc.; suicide; oxygen therapy; responding to an emergency; records and statistics; cooperation with physicians, police and other authorities; educational aids, etc., etc. There is also a complete glossary and index.

Annual Reports Received

Philadelphia Annual Report is Documented Promotion

The 100-page report of the Philadelphia Fire Department for the year 1953 might well be termed a documented story of progress. For statistically and otherwise it records a successful struggle of one of the nation's largest fire departments with destructive fire, in a municipality crowded with more than its share of hazards. Frank L. McNamee is Commissioner of Fire; Deputy Commissioner George E. Hink directs the fire fighting.

The report is divided into two major parts, the first being a running account

SENSIBLE
LUG COUPLINGS

ROCKER LUG TYPE

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GOVERNMENT SPECIFICATIONS

After 61 years' experience in the fire-fighting equipment field, Powhatan takes justifiable pride in the Improved Sensible Lug Coupling. Our full 61 years of know-how are represented in this modern and dependable piece of equipment. . . . Specify "Sensible."

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Established 1892

of progressive developments by each division of the Fire Bureau and the latter containing the statistics.

The total number of fire alarms in 1953 was 25,904, compared with 24,062 in 1952. False alarms from boxes were 2,489 in 1953 compared with 2,591 the year previous. Telephone false alarms amounted to 740 in 1953 as against 881 in 1952. Estimated fire losses for last year were $11,929,709 compared with $10,434,612 the year before. There were 77 extra alarm fires in 1953 or 11 more than in 1952.

* * *

Hamilton Celebrates Golden Jubilee

The Hamilton, New Zealand Fire Department celebrated its Golden Jubilee in April of this year. A feature of the celebration was the Auckland District United Fire Brigade Association competitions, held April 16-17-18. During this period, according to the Golden Jubilee Program, there were not only competitive hose laying, water throwing and other contests but numerous social affairs and entertainments, with the Hamilton Fire Brigade playing the stellar role.

The Program traces the progress of the Fire Brigade from its inception in 1904 to the present day. S. B. Irving is superintendent of the Brigade.

Radio Alerts Sycamore Volunteers

Latest to install a modern system of alerting volunteer members of the fire department is Sycamore, Illinois.

Fire Chief James Foster, of the Sycamore Fire Department, sends the details of the recently installed radio alarm system, which was purchased with two per cent insurance money and the sponsoring of ball games, carnivals, etc.

The radio alarm system covers the 21 men on the department and was put into service February 15 of this year. It alerts the men in their homes and, according to Chief Foster, has eliminated the sounding of the department's large siren. This, in turn, has aided materially in solving the problem of fire truck followers who formerly took off to satisfy their insatiable curiosity when the public signal sounded for a fire or other emergency.

A base station is located at the fire house, with transmitter, etc., operating on 33.86 MC, an exclusive fire department frequency. The department receives 90 per cent of all alarms by telephone. The officer taking the call writes the location of the fire on a blackboard. Then he sounds a warning buzzer in the microphone, after which he announces the location over the alerting radio system.

The alarm goes into all 21 homes of members at the same time. The men at the fire station then proceed direct to the location of the emergency. En route, they repeat the address over the apparatus radio and this in turn goes into the homes of the firemen.

The chief's car is also equipped with two-way radio but it is on the sheriff's frequency.

The total cost of the complete installation was about $3,500. This includes the base station, with 70-foot tower antenna and necessary wiring, the 21 receivers for firemen's homes, etc.

According to Chief Foster, the system has worked out very satisfactorily. He says it is not unusual to have volunteers at the fire when the apparatus arrives.

Oil Reservoir — Filled through pipe plug in bonnet — assures positive lubrication of stem threads.

Dry Top Design — Prevents freezing of stem threads.

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AWWA Improved FIRE HYDRANT

"O" Ring Seals — Make permanent water-tight seal around stem.

Breech Locked Nozzles — Interlocking lugs prevent blowout.

Safety Stem Coupling and Safety Flange — Coupling and flange break on impact, preventing damage to stem and barrel. Permits convenient facing of nozzles. Extension sections may be added or upper barrel may be changed from two-way to three-way hydrant without digging or water shut-off.

Compression-type Main Valve — Closes with water pressure.

Double Drain Valves — Integral part of main valve assembly.

Double Drain Openings — Force flushed each time hydrant is operated.

Bronze Seat Ring — Straight threads for easy removal.

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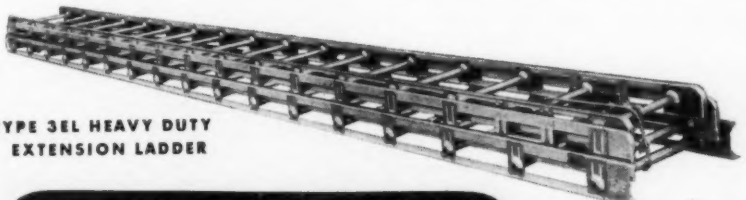
✓ FOOL-PROOF OPERATION

YOU CAN ORDER ALCO-LITE ALUMINUM FIRE LADDERS AS ORIGINAL EQUIPMENT FROM ANY TRUCK COMPANY



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Firemen the world over rely on Braxmar for the finest badges money can buy. We offer the widest possible selection in nickel, chrome plate, sterling silver, gold plate, rolled gold and solid gold; all of our badges and insignia are the work of experts with a lifetime of service.

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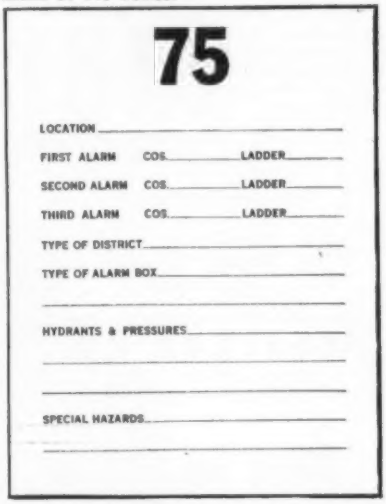
Short Cuts and Gadgets

HOW JAMESTOWN HANDLES BOX ALARM SYSTEM

Jamestown, N. Y., is another city that has more or less outgrown its old box alarm system. As Fire Chief Charles R. Dorman says, "we have been adding master boxes to the system and other boxes in the downtown area whereby the number of boxes has grown from 100 in 1940 to 150 today, with more in process of being added."

"This growth," the Chief adds, "has made the old type running charts obsolete, as they were designed for a maximum of 140 boxes."



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LOCATION _____

FIRST ALARM COS. _____ LADDER _____

SECOND ALARM COS. _____ LADDER _____

THIRD ALARM COS. _____ LADDER _____

TYPE OF DISTRICT _____

TYPE OF ALARM BOX _____

HYDRANTS & PRESSURES _____

SPECIAL HAZARDS _____

The new system installed by the department is extendable by simply adding a 25 card rack at any time. The racks are ordinary time card holders (see pictures), each card containing information pertinent to the particular location covered by the card. Each card, furthermore, is covered by a cellophane wrap.

An interesting feature of this system is that the captain, or other officer in charge of a company, takes the card with him when answering an alarm. Thus he is to a considerable extent "fore-armed" in his operations.

We're grateful to Chief Dorman for this "short cut."

TO HELP SOLVE PHONE ALARM TROUBLES

As our readers will attest, FIRE ENGINEERING has given considerable prominence to the part communications play in fire control and extinguishment, particularly the use of radio telephone and all other facilities by fire departments. This is as it should be, for no enterprising fireman will admit that the ultimate in fire service communications has been achieved.

One of the most serious weaknesses has been in the use of the telephone, both to receive alarms and to alert volunteer firemen, particularly in the small town and rural areas. That problem existed in Union Township, Indiana, and bothered fire fighters until Chief Marion H. Gilfoy and the members of the Union Township Volunteer Fire Department, of Kingsford Heights, Ind., did something about it.

What they did is briefly told in the contribution of Chief Gilfoy as follows:

"I suppose all volunteer departments have had the fire alarm troubles we did; I don't know what they have done —but here is the answer to *our* troubles. We tried for years to obtain a phone, but since most of our phones are party lines, we could not use any hook-up on our sirens; party-line phones work on grounded circuits and any even number would sound the sirens.

We wanted a phone because we have three towns, the Township, and State Police calls on highway fires, and had to have several numbers listed to insure the call reaching at least one fireman. Our electrician finally worked out a small unit to use on the phone, and now we have our own phone in the station and when the number is dialed, the sirens are started and we can roll out in two to three minutes.

We get wonderful cooperation from our telephone company, but until this unit was perfected they could not offer us any equipment to cover our needs. We have a large air horn to blow our box calls for fire locations; this was installed by the government when this town was a housing project. Our two sirens are hooked to the phone and start as soon as the phone rings. The first firemen in the station can start the air horn to give location.

The old and the new systems.

The second reason we wanted a unit such as we have was that we could not afford to have a private line extended to us. We had to have a unit that would work on a party line; now we get immediate service, no long conversations holding up the alarm.

This is something that could happen on any party line but once people understand that the Fire Department is on their line they will cooperate.

The unit our electrician perfected will work on a private phone, of course, although it was primarily developed for a party line phone. We have an old magneto telephone system installed for the town fire alarm system and this is also, hooked to the sirens. There is a control box with a red light which, when lit, shows that the alarm is on the dial phone; when not lighted we know it is on the town system.

Our complete installation is protected against outside interference so we have no false runs during electrical storms, etc. The small number of false alarms causes no disturbance, but for the convenience to our people, it is well worth the trouble caused by a false alarm once in awhile.

* * *

DON'T LOSE THAT I.D. BADGE!

Nothing more exasperating for a fireman than to lose his departmental badge!

Here's an idea lifted from *Popular Mechanics* of January, 1954 which, although it was conceived for hunters, might apply fully well to fire fighters.

The 'gadget' is nothing more than a bit of adhesive tape. The pin of the badge is inserted through the cloth and also through a small square of adhesive tape stuck on the back of the garment, as shown in the picture. The tape anchors the badge securely and yet may be removed easily when the badge is taken off.

* * *

NOW—C.D. MARKERS IN AUTO DIALS

From Detroit comes the announcement that Chrysler Corp. has redesigned its automobile radio dials to help motorists locate civil defense frequencies quickly in the event of enemy air attack. This is in line with "Conelrad" which takes all but selected radio stations off the air in time of attack.

* * *

LIGHT REFLECTING PAINT

Rear steps of all Lakewood, N. Y., Fire Department's apparatus are painted with new light reflecting paint as a 'precautionary measure' to protect rigs while traveling at night.

Numbers are also painted on the backs of each fireman's turnout coat, according to Fire Chief Larry Bramstong.

Quick-Starting Portable . . . HALE FZZ

The FZZ will supply from draft 60 GPM at 90 lbs., and 100 GPM at 60 lbs. Starts easily and quickly in all types of weather.

Firefighters are pleased with the quick-starting ability of the Hale type FZZ Portable Pumping Unit—an especially valuable feature in freezing weather. The 4-cycle single cylinder 8¼ H.P. engine ensures ease and speed in starting . . . and plenty of power to the direct-connected Hale Pump. NOTE: Discharge adapter available for 2½-inch fire hose.

Many FZZ owners use a Hale 2½" adapter for pumping through a long single 2½" line to a fire distant from source of water. They then wye at the fire end into two 1½" lines providing two capable fire streams.

Write for FZZ Folder. Let us know if your Company wants a demonstration.

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FIRE PUMPS IN ALL STANDARD CAPACITIES

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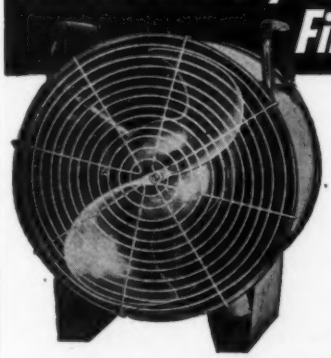
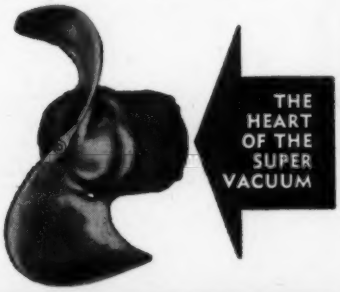


● The Super Vacuum Smoke ejector is a powerful portable fan unit designed especially for fire departments. This design is a new and revolutionary principle in moving air. Several thousand Super Vacuum Smoke ejectors are in use throughout the United States and Canada. Controlled ventilation is new and very necessary in fire fighting. Years of service and satisfied users are your best guarantee for any merchandise.

● The secret of Super Vacuum is the patented fan blade. Conventional fans chop the air and push it back. Whereas the Super Vacuum fan blade is a perfect spiral air screw which creates a partial vacuum, suction is created over the entire face of the blade and the air or smoke is discharged in a high velocity spiral. There are no dead spots—that is why Super Vacuum outperforms other fans twice its size.



Write for Additional Information or Contact Your Local Fire Equipment Dealer

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Super Vacuum MANUFACTURING CO.
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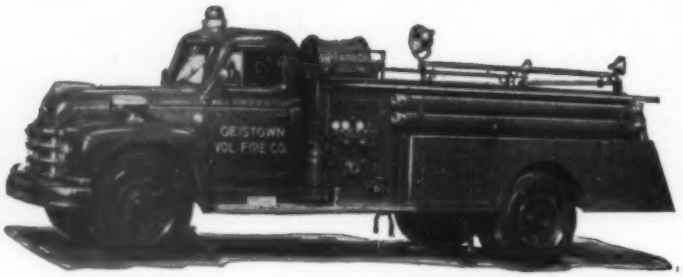
Champion Fire Apparatus



A highly efficient pumper apparatus with the Champion Three Stage Centrifugal Pump powered by Diamond T. The Pump is the Type SH750 which delivers 750 gallon Underwriter performance plus 60 gallons per minute at 850 lbs. for high pressure fog.

Or this Darley Apparatus is also available in Underwriter capacities of 600 GPM and 500 GPM. Modern commercial truck motors have adequate power for either 750, 600 or 500 GPM pumps.

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Circul-Air Dryers have passed the Approvals Tests and are listed by the Underwriter's Laboratories, Inc., Chicago, and the Canadian Standards Association.

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Circul-Air is the patented, electrically operated hose dryer which circulates prewarmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. It's designed to lengthen hose life, improve the appearance and functional design of new fire houses, and to save floor space and hard work. NO OTHER DRYING METHOD IS SO FAST—SO ECONOMICAL—SO EASY TO USE.

ACCEPTED • APPROVED • RECOMMENDED

ACCEPTED as the standard drying medium in over 1500 fire departments — APPROVED by the leading testing laboratories — RECOMMENDED by fire hose manufacturers and Fire Chiefs "all over America."

If you are building, send for free copy of "Fire Station Design"

NEW HOSE DRYING MANUAL TELLS HOW TO DRY, STORE AND CONSERVE FIRE HOSE

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Convention Dates

July 20-24—DELAWARE STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual fire college, Wesley College, Dover, Dela. For information, contact R. H. Boyer, President, Capitol Fire Equipment Co., Inc., 205 W. Division Street, Dover, Dela.

July 21-24—WASHINGTON STATE FIRE SCHOOL. Annual meeting, Tacoma, Wash. Director, J. R. Cook, Assistant Supervisor State Board for Vocational Education, 1712 Harvard Avenue, Seattle, Wash.

July 22-24—ULSTER COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, New Paltz, N. Y. Secretary, Fred C. Harder, 34 Jarrold Street, Kingston, N. Y.

July 23-24—DUTCHESS COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Millbrook, N. Y. Secretary, Al Belle Isle, Glenham, N. Y.

July 23-24—EASTERN ONTARIO FIREMEN'S ASSOCIATION. Annual meeting and International Firemen's Day, Gananoque, Ont. Secretary-Treasurer, Gerald F. Hampton, Gananoque, Ont.

July 27-28—WESTERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Tonawanda, N. Y. Secretary, James H. Surridge, 308 East Henrietta Road, Rochester 20, N. Y.

July 27-29—MISSOURI FIRE COLLEGE. Annual meeting, University of Missouri, Columbia, Mo. Director, J. L. Fetters, Administrative Assistant. Adult Education and Extension Service for Firemanship Training, University of Missouri, Columbia, Mo.

July 27-29—WISCONSIN STATE FIRE CHIEFS ASSOCIATION. Annual meeting, Beloit, Wis. For information contact Chief Alex Andreski, Fire Headquarters, Janesville, Wis.

July 30-Aug. 2—FIREMEN'S ASSOCIATION OF ONTARIO. Annual meeting, Milton, Ont. Secretary, E. O. McNeely, 141 Brownville Avenue, Toronto 9, Ont.

Aug. 9-14—INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS. Annual meeting, Miami, Fla. Secretary-Treasurer, George J. Richardson, of A. F. of L. Building. Washington 1, D. C.

Aug. 14-15—VERMONT STATE FIRE FIGHTERS ASSOCIATION. Annual meeting, Vergennes, Vt. Secretary, W. H. Adams, Vergennes, Vt.

Aug. 16-18 — WISCONSIN FIRE SCHOOL, University of Wisconsin. Annual meeting, Madison, Wis. Director, J. J. Lichty, Coordinator Business Institutes, Box 2098, Madison, Wis.

Aug. 16-19—CANADIAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Saskatoon, Sask. Secretary-Treasurer, Allan H. Clark, Chief of Fire Department, Lakefield, Ont.

Aug. 17-18—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. Annual meeting, Buffalo, N. Y. Secretary, Eugene M. Braun, 4025 Main Street, Buffalo, N. Y.

Aug. 17-19—FIRE PROTECTION ENGINEERING CONFERENCE. Held under sponsoring of the M. I. T. School of Architecture and City Planning, the M. I. T. School of Engineering and the M. I. T. School of Industrial Management. For information regarding program, method of enrollment, living accommodations in the M. I. T. dormitory system, etc., write Professor Ernest H. Huntress, Director of the Summer Session, Massachusetts Institute of Technology, Cambridge 39, Mass.

Aug. 20—FLORIDA STATE FIRE COLLEGE, Fourth of four sessions, Ocala, Fla. Director, W. H. Barnett, Superintendent, Florida State Fire College, P. O. Box 785, Ocala, Fla.

Aug. 20-22—OHIO STATE FIREMEN'S ASSOCIATION. Annual meeting, Youngstown, Ohio. Secretary-Treasurer, H. E. Miller, Box 35, Mantua, Ohio.

Aug. 23-26—PACIFIC COAST INTER-MOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Long Beach, Cal. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Convention Dates

Aug. 23-27—TENNESSEE STATE FIRE SERVICE SCHOOL. Annual meeting, Middle Tennessee State College, Murfreesboro, Tenn. Directors, H. S. Elkins, W. A. Seeley, Fire Department Instructors, 215 Chestnut Street, Chattanooga, Tenn.

Aug. 25-28—MONTANA STATE FIREMEN'S SCHOOL. Annual meeting, Polson, Mont. Director, Clayton Brown, Chief of the Fire Department, Polson, Mont.

Sept. 4-6—NORTHEASTERN PENNSYLVANIA VOLUNTEER FIREMEN'S FEDERATION. Annual meeting, Taylor, Pa. Secretary, Harry Armstrong, 134 Washington Street, Taylor, Pa.

Sept. 7-10—MARYLAND SHORT COURSE FOR FIREMEN. Annual meeting, University of Maryland. For information, contact Robert C. Byrus, Director, Fire Service Extension, Fire Service Building, University of Maryland, College Park, Md.

Sept. 10-12—OHIO FIRE CHIEFS' ASSOCIATION. Annual meeting, Akron, Ohio. Secretary-Treasurer, Chief William H. Cheesman, Harrison Township, Dayton, Ohio.

Sept. 11-12 (tentative)—SOUTHERN WISCONSIN AND NORTHERN ILLINOIS FIRE SCHOOL. Director, Norris T. Ames, Insurance Building, Madison, Wis.

Sept. 13-17—VIRGINIA STATE FIRE SCHOOL. Annual meeting, Norfolk, Va. Director, Clay A. Easterly, Fire Marshal, P. O. Box 112, Martinsville, Va.

Sept. 13-17—OHIO STATE FIRE SCHOOL. Annual meeting, Ohio State University, Columbus, Ohio. Further information can be obtained from Wayne C. Jenkins, Assistant Fire School Director, Division of State Fire Marshal, Columbus 15, Ohio.

Sept. 14-15—IOWA FIREMEN'S ASSOCIATION. Annual meeting, Independence, Ia. Secretary, Carl H. Fuchs, 749 Kinsey Avenue, Des Moines, Ia.

Sept. 14-17—INDIANA STATE FIRE SCHOOL. Annual meeting, Purdue University, Lafayette, Ind. Director, Francis W. Hartman, Chief of Fire Training, Purdue University, Building FWA7, West Lafayette, Ind.

Sept. 17-18—JEFFERSON COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention and tournament, Deferiet, N. Y. Secretary, Jack Farrell, 418 Merrick Street, Clayton, N. Y.

Oct. 4-7—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Atlantic City, N. J. Secretary-Treasurer, Irwin Shulsinger, 130 West 42nd Street, New York, N. Y.

Oct. 12-14—ILLINOIS FIREMEN'S ASSOCIATION. Annual meeting, Evanston, Ill. Secretary, R. W. Alsip, P. O. Box 8, Champaign, Ill.

Oct. 12-15—KANSAS STATE FIRE SCHOOL. Annual meeting, University of Kansas, Hutchinson, Kans. Director, Gerald Pearson, Director, University of Kansas Extension Classes, 111 Fraser Hall, Lawrence, Kans.

Oct. 14-16—ARIZONA STATE FIRE TRAINING SCHOOL. Annual meeting, Phoenix, Ariz. Director, Harry C. Bigglestone, District Engineer, Board of Fire Underwriters of the Pacific, Luhrs Building, Phoenix, Ariz.

Oct. 17—GREAT LAKES ASSOCIATION OF FIRE CHIEFS. Annual meeting, Rice Hotel, Houston, Tex. Secretary-Treasurer, Chief Elmer Stough, 605 Fourth Street, Lorain, Ohio.

Oct. 18-20—NEBRASKA STATE VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Lincoln, Neb. Secretary-Treasurer, Russell D. Salak, P. O. Box 312, Schuyler, Neb.

Oct. 18-21—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Houston, Tex. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

Oct. 19-20—INTERNATIONAL FIRE BUFF ASSOCIATES, INC. Annual meeting, Houston, Tex., during the I. A. F. C. Conference. Secretary, E. R. Damaschke, 916 West Marshall Avenue, Ferndale 20, Mich.

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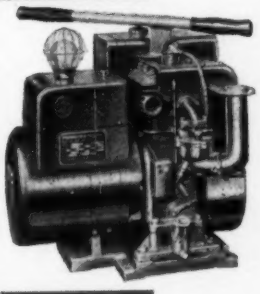

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Fire and Police Duties Combined at Monterey Park, Calif.

John Y. Cordell assumed office July 1 as the first head of the new Monterey Park, Calif., Public Safety Department.

Cordell, who retired in 1943 as a battalion chief from the nearby Los Angeles Fire Department, organized the combined Sunnyvale, Calif., Fire and Police Public Safety Department in 1949.

Chief Edward McElhannon, officially retired July 1 as head of the Monterey Park F.D. after 22 years of service.

Merging of the city's police and fire departments into a public safety department came after much discussion in the Monterey Park City Council. It was strongly advocated by City Manager John C. Crowley, and just as strongly opposed by many members of both the Monterey Park police and fire departments.

"We should be able to save the taxpayers a lot of money," one civic leader stated. "Actually, we are just trying this plan out. If it doesn't work, we'll probably just go back to the old system.

"A lot of our firemen and policemen are getting all worked up over the new system, but I think they should at least give it a chance."

In the proposed system most of the men would be assigned to police duties, but would also respond to fire alarms.

Monterey Park has a population of 26,000 and is in the San Gabriel Valley a few miles east of Los Angeles.

CLIFF DEKTAR

Chicago 5-11 Alarm Stockyard Fire Threatens Wide Destruction

An explosion of undetermined origin touched off a 5-11 alarm fire which nearly demolished the Armour & Co. 5-story brick animal feed plant on June 18 at Chicago, Ill., with property loss of over $500,000.

Fully one-fourth of the city's fire force engaged in the strenuous three-hour struggle to prevent extension of the hot, smoky fire to a natural gas storage building and to Armour's 10-story fertilizer plant, adjoining the 50-year-old grease-soaked structure where fats are cooked and meat scraps processed for animal food.

Hundreds of sweating, choking firemen, forced to battle the blaze from outside because of the heavy, acrid, yellowish smoke, managed to keep the flames from the east end of the elongated, half-moon-shaped building, containing alcohol, high explosive chemicals and volatile fluids.

The fire broke out about 6:15 P.M., and multiple alarms were sounded in rapid succession, bringing 45 pieces of major fire equipment, including 29 pumpers, 5 ladder trucks, two water towers and several squad and other units. Heavy streams were directed onto the storage house and the fertilizer plant, 20 feet away, and efforts were made to shut off natural gas which enters the storage house 25 feet away from underground tanks. Firemen were unable to do this, but were able to empty, by slow degrees, highly explosives gas from three tanks behind the building and a pipe that encircles its first floor. A railroad tank car containing explosive methyl chloride on a siding 10 feet from the burning building also gave fire fighters concern. This was kept cooled by fire streams.

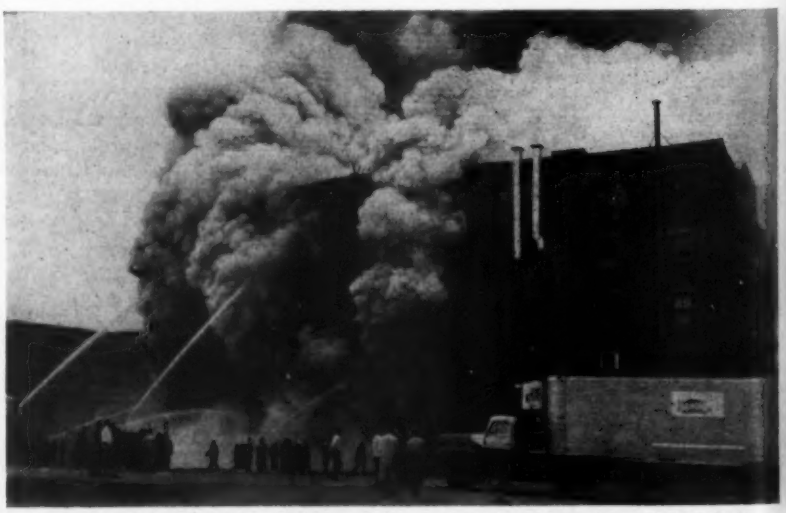
Some 35 employees of the feed plant escaped without injury. Armour fire brigade members helped City Fire Department by wetting down exposed company property.

A heavy fire wall aided the fire fighters in confining the threatening fire to the feed building. Fire operations were directed by Chief Fire Marshal John Haberkorn, and Assistant Fire Commissioner Anthony J. Mullaney. Photo of the fire at its height appears on the front cover of this issue.

British Firemen Injured Answering False Alarm

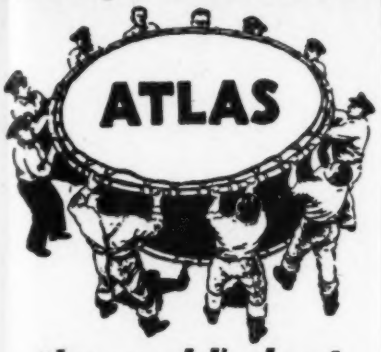
Four firemen of Southampton, England, were injured in what the press called "speeding in answer to a false alarm" from the 83,000-ton liner "Queen Elizabeth."

The accident was a freak one. Their fire truck struck a dockside hawser. The impact threw the four against the windshield (windscreen, to the British) and all suffered cuts and concussion.



Armour stock food plant fire, Chicago, after first arriving companies went into action.

always SPECIFY



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Training and Rating

(*Continued from page* 570)

2-man ladder raise _____
Officer_____, 1-man carry _____
Officer_____, 1-man raise _____
Officer_____, climbing technique _____
Officers_____and_____ carry hose up ladder _____

Portable extinguishers (Have extinguishers all mixed together. Fires will be torched off and given 30 seconds preburn. Officers by number will be requested to select proper extinguisher and extinguish fire.)

1. Officer_____, Class A fire:
Prompt selection _____
Operating knowledge _____
Technique _____
2. Officer_____, Class B fire:
Prompt selection _____
Operating knowledge _____
Technique _____
3. Officer_____, Class A fire:
Prompt selection _____
Operating knowledge _____
Technique _____
4. Officer_____, Class B fire:
Prompt selection _____
Operating knowledge _____
Technique _____
5. Officer_____, Class A fire:
Prompt selection _____
Operating knowledge _____
Technique _____
6. Officer_____, Class B fire:
Prompt selection _____
Operating knowledge _____
Technique _____
7. Officer_____, Class A fire:
Prompt selection _____
Operating knowledge _____
Technique _____
8. Officer_____, Class B fire:
Prompt selection _____
Operating knowledge _____
Technique _____

Hose Stream

1. Officers_____and_____:
a. Connect pumper to hydrant _____
b. Lay from pumper (not necessarily in direction of pit) two section 2½-inch hose _____
c. Wye from 2½ to 1½ _____
d. Connect one section 1½-inch hose to each wye outlet _____
e. Connect NAP nozzle with high velocity tip to one section 1½-inch hose _____
f. Connect NAP nozzle and 10-foot applicator to other section 1½-inch hose _____
(Re c, e and f above; if wye and 1½-inch hose and nozzles preconnected, use this)
g. Charge line and operate line with applicator _____
2. Officers_____and_____:
a. Using high-velocity fog line:
Operate at h.v. fog position _____
Operate at solid stream _____
Shut off _____
Back-up man technique _____

Live Fires

1. Drum fire, *up-wind side*, one 1½-inch line, high velocity fog.
Officer_____operate pumper; Officers _____and_____on line.
Score: Pumper operation _____

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Hose and nozzle operation ———
Firefighting technique ———

2. Drum fire, *lee side*, one 1½-inch line, high velocity fog.
Officer———operate pumper; Officers ———and———on line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———

3. Drum fire, *up-wind side*, one 1½-inch line, low velocity fog (10 ft. applicator).
Officer———operate pumper: Officers ———and———on line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———

4. Drum fire, *lee side*, two 1½-inch lines, high velocity fog.
Officer———operate pumper; Officer ———on line; Officer———on other line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———

5. Drum fire, *up-wind side*, one 1½-inch line, low-velocity (4 ft. applicator) fog.
Officer———operate pumper; Officer ———on line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———

6. Drum fire, *lee side*, one 1½-inch line, high velocity fog.
Officer———operate pumper; Officer ———on line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———
(Note: Douse salvage tries with gasoline and oil and torch off for pre-burn.)

7. Drum fire, *up-wind side*, high pressure fog.
Officer———, operate pumper; Officer ———on line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———

8. Drum fire, *lee side*, high-pressure fog.
Officer———operate pumper; Officer ———on line.
Score: Pumper operation ———
Hose and nozzle operation ———
Firefighting technique ———
(Note: Douse lumber pile with gasoline and oil and torch off for pre-burn.)

9. Salvage tire fire.
Officers ——— and ———, extinguish fire.
Score: Extinguishing agent selection ———
Extinguishment technique ———
(Note: Douse with gasoline and oil and torch off again for another pre-burn.)

10. Lumber fire.
Officers ——— and ———; extinguish fire.
Score: Extinguishing agent selection ———

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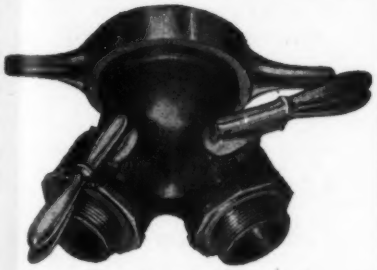

Fig. 164AN

4½" swivel female x two 2½" male Gated Siamese. Quick opening, ¼ turn valves.

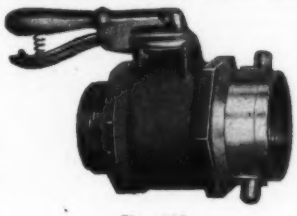

Fig. 163

Made either Right Hand or Left Hand 2½" male x female, gate valve.

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P.O. Box 921 **THE S-T HYDRANT WRENCH CO.** HOLYOKE, MASS.

Extinguishment technique _____

(Note: Douse lumber with gasoline and oil and torch off again, allow 5 minutes pre-burn, then re-torch drum. Now have three fires going: Tires, lumber and drums.)

11. General fire.

Officer———operate pumper; Officers ———and———extinguish the three fires, using own judgment as to best extinguishing methods, but using already-connected 1½-inch hose.

Score: Pumper operation _____
Hose and nozzle operation _____
Firefighting technique _____

As can be seen, each participating fireman was checked a number of times on every phase of fire suppression.

Right and wrong quiz answers, and right and wrong suppression techniques were scored on an Evaluation Form which is shown elsewhere in this article. A narrative summary was written on the form. However, errors and omissions which indicated future training needs were discussed between the staff inspector and the unit supervisor immediately following the quiz and drill sessions. The Evaluation sheet formalized these discussions and served as information for the Director of the Division of Reservoir Properties and other concerned TVA officials.

By thus pin-pointing both individual and unit needs, future training schedules were prepared which allowed for no wasted effort and useless repetitive instruction, thus effecting savings of the instructors' time and drill pay. If, for example, the majority of individuals in a unit showed deficiencies in ladder work, then ladder drills were scheduled. There were even refinements to this. If, say, most of the men were weak on raising and lowering materials from ladders, this was emphasized in the ladder drills. Or, if the men were awkward and slow in raising the pumper to the third stage for high pressure use, this point was emphasized in pumper drills.

It might be said here that TVA Public Safety Officers are trained in all aspects of fire fighting. Because of the knowledge they must absorb, they are carefully selected for initial employment. They work rotating posts and shifts. An officer working at headquarters must be able to take the engine to a fire, hook it up alone, if necessary, and put the pump into operation. An officer on patrol in the fire area must be able to man a fire line and operate it effectively. On large construction projects one or two employees have basic firefighter ratings and are assigned primary responsibility for fire prevention, suppression and training. Thus it is important that all members of a Public Safety Service unit be given not only fundamentals, but also advanced training. More or less continuous in-service training is necessary, and it is doubly important that no time be wasted in costly and un-needed training.

Re-checks of training progress in eliminating weaknesses are made at periodic intervals. These are centered on deficiencies brought out by initial inspections and upon the capacities of supervisors in keeping abreast of and imparting to unit members the latest developments in fire protection.

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1½"x50' 8J CRL fire hose, unused but soiled	$ .26 ft. cpld.
2½"x50' 8J CRL fire hose, unused but soiled	.44 ft. cpld.

UNUSED & CLEAN FACTORY PACKED

1½"x50' 8J CRL fire hose	$ .40 ft. cpld.
2½"x50' 8J CRL fire hose	.64 ft. cpld.
2½"x10' Hard suction hose	14.50 lgth cpld.
1"x50' Booster hose	.50 ft. cpld.
4"x16' DJ soft suction hose w/4½" cplgs long handle females	16.50 lgth. cpld.
1½" Suction hose	.75 ft. cpld.
1½"x50' Rubber covered water hose	.50 ft. cpld.
2½"x50' Rubber covered water hose	.90 ft. cpld.
1½"x25' Rubber covered water hose	10.00 lgth. cpld.
Wrecking bars, steel, heavy duty	2.50 ea.
Mechanical foam playpipes, Phomaire (Leading Manufacturer) (Cost $50.00 each)	8.50 ea.

SPECIAL OFFER

Just Received

1½" Fog nozzles, Brass, 2 position-leading brands, unused rated perfect condition ..... 29.50 ea.

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FOR SALE

1937 open model Chevrolet Fire Truck in excellent condition. 500 GPM centrifugal pump—recently overhauled. Complete with equipment and booster tank. Apparatus may be seen at the convenience of any one wishing to inspect it. Write or wire for further information to:

ALFRED PIOLI, Fire Chief
Citizens' Fire Company
Vintondale, Pennsylvania (Phone 5195)

FOR SALE

1948 International KB5, equipped with new 500 GPM Champion front mount pump. 350 gallon booster tank and one (1) booster hose reel. New Sterling Siren with red flasher.
1942 Buffalo 750 GPM Hale pump, 500 gallon booster tank with new siren and two (2) booster hose reels.

NORTHWEST MOTORS
695 Bankhead Avenue, N. W.
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40—Famous Make Pumps
500 GPM—Like New
Government Surplus
Individually Boxed
$250 Each

BILL THOMSON'S
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MOhawk 6-4741

SEALED BID NOTICE
1000 G.P.M. Pumper For Sale

In accordance with the Town Ordinance regulating Disposition of Town Owned Property, sealed bids will be received at the office of Director of Public Works, 740 Main Street, East Hartford, Connecticut, until 2:00 P.M. on Friday, August 27th, 1954.

Property for bid is as follows:
1—1930 Mack 1000 G.P.M., Triple Combination Pumper equipped with 100 gal. Booster Tank, Model A.P. Type 19.

Pumper is located at Fire Headquarters, 738 Main Street, East Hartford, Connecticut. Address all inquiries to Chief Francis J. Dagon, East Hartford Fire Department, 738 Main Street, East Hartford, Connecticut.

The town reserves the right to reject any or all bids when such action is deemed to the best interest of the Town of East Hartford.

BY: Town of East Hartford
Disposition Committee

Leland A. Sparks, Chairman
George J. Penney, Secretary
Andrew V. Carlson

FOR SALE

The City of Ecorse will receive bids for the sale of a 1930 American LaFrance Fire Unit, 6 Cylinder, 1000 gallon pumper, completely equipped except hose. Excellent condition, taken out of service June 11, 1954. Also for sale one (1) 1938 General Detroit Fire Unit, 1000 gallon pumper, sedan type body, Hercules motor, completely equipped except hose. Excellent condition. Taken out of service December 10, 1953.

Both pumpers available for inspection at Ecorse Fire Department, Ecorse 29, Michigan. For additional information contact Chief Fred A. Pudvan, Ecorse Fire Department.

Bids will be accepted up to 4:30 P.M., E. S. T., Tuesday, July 27, 1954, at the office of the City Clerk. They will be opened and read at the regular meeting of the City Council at 7:30 P.M. that evening.

The City reserves the right to accept or reject any or all bids that are deemed not to be in the best interest of the city.

WALTER CHASE
Purchasing Agent

CITY OF ECORSE
Ecorse, Michigan
Dated: June 22, 1954

FIREMANTIC GREETING CARDS

Yes, they are here at last, the new Firemantic Greeting Cards. Designed especially for firemen, fire fans, buffs and jakes. Cards are printed in 2 colors, brilliant Fire Engine Red and Black Ink, on high quality Bristol stock.

10 Birthday Cards — $1.15 postpaid
10 Get-Well Cards — $1.15 postpaid
20 Cards, 10 Birthday & 10 Get-Well Cards — $1.90 postpaid

Hurry, don't wait, send your order today and be the first in your organization to have these new cards.

S. S. COBB, JR.
Dept. FE 8511 Chesapeake Blvd.
Norfolk 3, Virginia

FOR SALE

One 1936 Reo Speed Wagon Fire Truck. Very low mileage. Equipped as follows:

Darley Fire Equipment
500 Gallon Pump
300 Gallon Water Tank
100 ft. 1 in. Booster Hose
2 lengths 6" Hard Suction Hose
1 Siren
1 Flasher Light (Mars)
Ladders
Plus other items
Priced for quick sale

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30 S. Main Street
Mt. Prospect, Illinois
Phone—Clearbrook 3-4420
Ask for Wilbert W. Busse

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FIRE ALARM SYSTEM SUPERINTENDENT: 30-55, responsible supervisory work in the operation, maintenance, and repair of a municipal fire alarm and signal system. Salary $4680-$5304 per year. Complete details by writing to:

DIRECTOR OF PERSONNEL,
Municipal Building, Hartford, Conn.

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1½" DOUBLE JACKET
OUR BEST $ $ $ VALUE TO DATE
50 FT. LGTHS. CPLD. NST OR IPT

Just received a special lot of 200 selected lengths. Hose is soiled but in excellent working condition. 400 lb. test type hose.

WHILE IT LASTS, ONLY

$ .45 FOOT CPLD.

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Phone VAlley 3-1672

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The Central Fire Truck Corporation has open protected territory available for active representation. We are an old established manufacturer of high quality fire apparatus and allied products. Immediate deliveries and prompt payment of commissions. Active sales helps. Write for interview.

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device that holds firmly, 2½ gal. foam and S & A extinguishers while removing and replacing caps. Makes recharging a simple one-man job. Save time and temper by using this new extinguisher holder! Used successfully by firemen in military installations, industrial plants and in city fire depts. Unconditional money-back guarantee. Order now! $2.00 each or box of 3 for $5.00.

ANDREW H. QUIRK
P. O. Box 1351, Hartford 1, Conn., JA. 8-8223

FOR SALE

1937—12 Cyl. American LaFrance Pumper

CHARLES F. UNZ
Fire Fighting Equipment
Marcellus, New York

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TURNOUT COATS and RUBBER COATS
EXPERTLY REPAIRED AT LOWEST PRICES
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SAVE MONEY We replace torn Boot-Tops for only $4.25 pr. We pay return freight or parcel post

GODFREY RUBBER CO., Inc.
32 Union Square East, New York 3, N. Y.

FOR SALE

1939 Buffalo, 500 GPM inclosed cab with standard equipment. Now in service.

For information or demonstration contact:

M. WALTOS, Secretary,
Board of Fire Commissioners,
Mattydale 11, N. Y.

Bids accepted.

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A RARE BARGAIN

200 ft. 2½" D. J. Hose ..... .65 ft.
200 ft. 1½" D. J. Hose ..... .40 ft.
First line—NST—Top Brand
Used on Reel and Drills—will stand 400# test.
This Hose Will Give Years of Service.
Write Box 145
FIRE ENGINEERING
24 West 40th St. New York 18, N. Y.

AGENTS WANTED

Old, established concern has developed new, patented product for police and fire department use. Give particulars on products, if any, you are now handling. Box 150, FIRE ENGINEERING, 24 West 40th St., New York 18, New York.

AMBULANCES

1947 Cadillac Superior, Ambulance, fully equipped LEECE-NEVILLE Electrical System, Heavy duty tires, needs painting, $650.00. Also 1950 Cadillac Superior Ambulance, excellent condition and appearance. Attractively priced for quick sale, financing available, photos available. Write Box 140, FIRE ENGINEERING, 24 W. 40th St., N. Y. 18, N. Y.

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THE LARGEST, MOST POWERFUL SIREN

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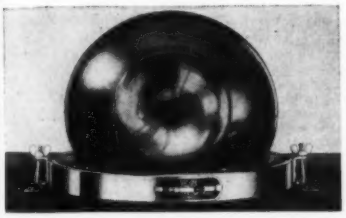

NEW—"REVOLVO-RAY"
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The SIRENO COMPANY, Inc.
Dept. 27—214 WILLIAM ST., N.Y. 38, N.Y.

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ROTARY GEAR
PUMP

A new, better, APPARATUS PUMP!

Rhode Island Forest Service is pleased with 15 Leonard Pumps now in service. They deliver 150 GPM at 150 lbs. Specify LEONARD on new apparatus or replacement. Write for data.

National Distributor

AMERICAN FIRE EQUIPMENT CO.
717 BOYLSTON STREET, BOSTON 16, MASS.

training and evaluation program may be determined in one way by a glance at the record. Operating under constantly hazardous conditions, there have been no large fires on major construction projects. And average annual losses per fire have been consistently much less than the national average. In 1952—the latest year formally published nationally—the TVA average was $215.00, while the national average was $555.00. In 1953 the TVA average was $61.00.

New York State Holds Record Conference

Over 350 fire chiefs, their famiiles and guests registered for the 48th Annual Meeting of the New York State Association of Fire Chiefs at the Hotel Martinique, New York City, June 6-7-8 and 9.

With the enthusiastic sponsorship of the New York Fire Department, Fire Commissioner Edward F. Cavanagh, Jr., Fire Chief Peter Loftus, and Deputy Fire Chief Thomas P. O'Brien and his aides, who managed the details, there was education and entertainment for all.

The memorial services for the departed were held Sunday, June 6th, with the New York Fire Department Glee Club and Chaplains of the New York Fire Department participating. The business sessions were conducted by President, Chief Lew Mosher of Elmira, N. Y., and started with a talk by B. Richter Townsend, Chief, State Bureau of Fire, Albany. All hands enjoyed a boat ride around Manhattan in the afternoon, sponsored by the N. Y. Board of Fire Underwriters.

On Tuesday, following business sessions, there was an educational round table directed by Chief Townsend, and participated in by educational and state officials. "The State Natural Disaster Plan and the Fire Service" was the subject discussed by Mr. Sidney Goetz, N.Y.S.C.D. Commission. He was followed by Chief Henry G. Thomas, president of the International Association of Fire Chiefs, who spoke on "The Fire Service Looks Ahead."

That evening a cocktail party was sponsored jointly by the American-La France-Foamite Corp. and the State Association. It was followed by the banquet attended by over 400, including Mayor Wagner, and the city's leading fire officials. Commissioner Cavanagh directed installation of the new officers. Retiring president Chief Leo Barry of Utica was presented the past-president's badge.

The closing day was given over to tours of the New York Fire Department.

The officers for the forthcoming term are: Chief Lee I. Hunt, Middletown, President; Chief Leo R. Barry, Utica, First Vice-President; Chief Howard Harrington, Baldwinsville, Second Vice-President, and Chief Ward A. Bohner, Utica, Secretary-Treasurer.

Saboteurs Ruin Costly Capacitors

Press reports relate that saboteurs have ruined 1,000 electric capacitors, manufactured by a Pasadena, Calif., firm for the Navy. The electronic parts, destined to be included in critical radar installations, had salt sprinkled into the cartons containing 500 capacitors each. Salt renders the sensitive instruments inoperative.

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DANDUX
Salvage
Covers

- LIGHT WEIGHT—pliable
- MEET SPECIFICATIONS of NATIONAL BOARD FIRE UNDERWRITERS
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- 3 sizes • 4 weights

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BUNKER SUITS
FOR COMFORT & PROTECTION

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SIREN BOOTS

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ST. JOSEPH • • MISSOURI

CAIRNS HELMETS

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(Flint-Flex)

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(Aluminum)

DROP-BRIM MODELS

No. 720 — "COMMANDO"
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No. 550 — "SEAMLESS"
(Leather)

No. 710 — "STREAMLINER"
(Aluminum)

Write for Catalog 341 showing everything a fireman needs for his personal equipment — together with Department Record Books, Secretary's Books, and printed forms.

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SINCE 1836

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JULY, 1954

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A complete fire protection program for your plant and your employees

- Personnel training in your plant by experienced Ansul instructors.
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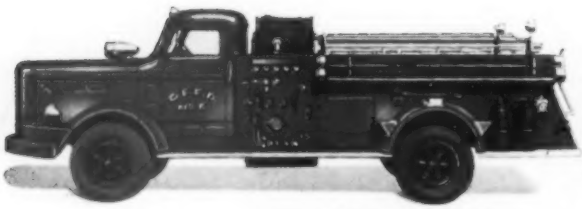

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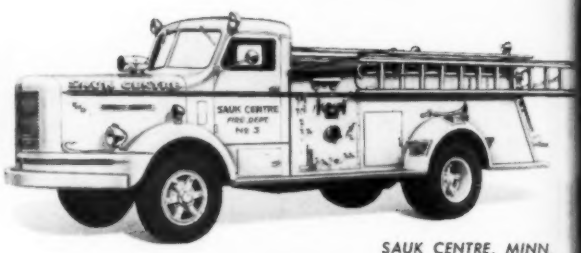

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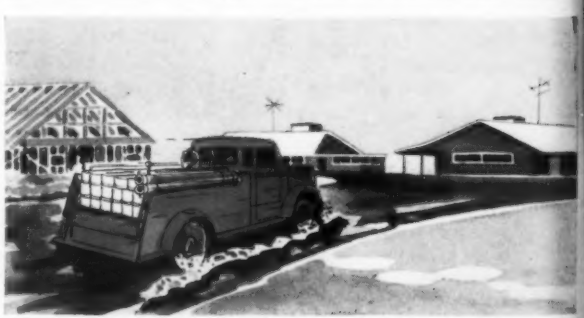

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